# onsemi

# Complementary Bias Resistor Transistors R1 = 4.7 k $\Omega$ , R2 = $\infty$ k $\Omega$

NPN and PNP Transistors with Monolithic Bias Resistor Network

# MUN5316DW1, NSBC143TPDXV6

This series of digital transistors is designed to replace a single device and its external resistor bias network. The Bias Resistor Transistor (BRT) contains a single transistor with a monolithic bias network consisting of two resistors; a series base resistor and a base–emitter resistor. The BRT eliminates these individual components by integrating them into a single device. The use of a BRT can reduce both system cost and board space.

#### Features

- S and NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable\*
- Simplifies Circuit Design
- Reduces Board Space
- Reduces Component Count
- These Devices are Pb–Free, Halogen Free/BFR Free and are RoHS Compliant

#### MAXIMUM RATINGS

 $(T_A$  = 25  $^\circ\text{C}$  both polarities Q1 (PNP) and Q2 (NPN), unless otherwise noted)

Rating	Symbol	Max	Unit
Collector-Base Voltage	V <sub>CBO</sub>	50	Vdc
Collector-Emitter Voltage	V <sub>CEO</sub>	50	Vdc
Collector Current – Continuous	Ι <sub>C</sub>	100	mAdc
Input Forward Voltage	V <sub>IN(fwd)</sub>	30	Vdc
Input Reverse Voltage -NPN -PNP	V <sub>IN(rev)</sub>	6 5	Vdc

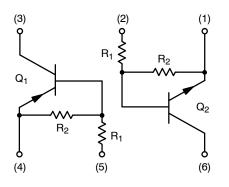
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

#### **ORDERING INFORMATION**

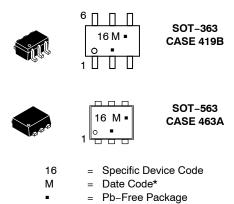
Device	Package	Shipping <sup>†</sup>
MUN5316DW1T1G NSVMUN5316DW1T1G*	SOT-363	3,000 / Tape & Reel
NSBC143TPDXV6T1G, NSVBC143TPDXV6T1G*	SOT-563	4,000 / Tape & Reel

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.





### MARKING DIAGRAMS



(Note: Microdot may be in either location)

\*Date Code orientation may vary depending upon manufacturing location.

### THERMAL CHARACTERISTICS

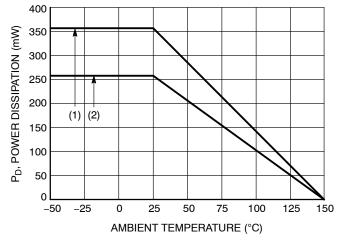
	Characteristic	Symbol	Мах	Unit
MUN5316DW1 (SOT-363)	One Junction Heated	•		
Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C	(Note 1) (Note 2) (Note 1) (Note 2)	PD	187 256 1.5 2.0	mW mW/°C
Thermal Resistance, Junction to Ambient	(Note 1) (Note 2)	$R_{ heta JA}$	670 490	°C/W
MUN5316DW1 (SOT-363)	Both Junction Heated (Note 3)			
Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C	(Note 1) (Note 2) (Note 1) (Note 2)	PD	250 385 2.0 3.0	mW mW/°C
Thermal Resistance, Junction to Ambient	(Note 1) (Note 2)	R <sub>θJA</sub>	493 325	°C/W
Thermal Resistance, Junction to Lead	(Note 1) (Note 2)	R <sub>θJL</sub>	188 208	°C/W
Junction and Storage Temp	perature Range	T <sub>J</sub> , T <sub>stg</sub>	–55 to +150	°C
NSBC143TPDXV6 (SOT-5	63) One Junction Heated			
Total Device Dissipation $T_A = 25^{\circ}C$ Derate above 25°C	(Note 1) (Note 1)	PD	357 2.9	mW mW/°C
Thermal Resistance, Junction to Ambient	(Note 1)	R <sub>0JA</sub>	350	°C/W
NSBC143TPDXV6 (SOT-5	63) Both Junction Heated (Note 3)		•	
Total Device Dissipation T <sub>A</sub> = 25°C Derate above 25°C	(Note 1) (Note 1)	PD	500 4.0	mW mW/°C
Thermal Resistance, Junction to Ambient	(Note 1)	$R_{ hetaJA}$	250	°C/W
Junction and Storage Temp	perature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

FR-4 @ Minimum Pad.
 FR-4 @ 1.0 x 1.0 Inch Pad.
 Both junction heated values assume total power is sum of two equally powered channels.

ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C both polarities Q<sub>1</sub> (PNP) and Q<sub>2</sub> (NPN), unless otherwise noted)

Characteristic	Symbol	Min	Тур	Max	Unit
OFF CHARACTERISTICS					
Collector-Base Cutoff Current $(V_{CB} = 50 \text{ V}, I_E = 0)$	I <sub>CBO</sub>	-	_	100	nAdc
Collector-Emitter Cutoff Current $(V_{CE} = 50 \text{ V}, I_B = 0)$	ICEO	_	_	500	nAdc
Emitter-Base Cutoff Current ( $V_{EB} = 6.0 \text{ V}, I_C = 0$ )	I <sub>EBO</sub>	-	_	1.9	mAdc
Collector-Base Breakdown Voltage $(I_C = 10 \ \mu A, I_E = 0)$	V <sub>(BR)CBO</sub>	50	_	-	Vdc
Collector–Emitter Breakdown Voltage (Note 4) $(I_{C} = 2.0 \text{ mA}, I_{B} = 0)$	V <sub>(BR)CEO</sub>	50	_	-	Vdc
ON CHARACTERISTICS					
DC Current Gain (Note 4) ( $I_C = 5.0 \text{ mA}, V_{CE} = 10 \text{ V}$ )	h <sub>FE</sub>	160	350	-	
Collector-Emitter Saturation Voltage (Note 4) $(I_C = 10 \text{ mA}, I_B = 0.3 \text{ mA})$	V <sub>CE(sat)</sub>	_	_	0.25	Vdc
Input Voltage (off) ( $V_{CE} = 5.0 \text{ V}, I_C = 100 \mu\text{A}$ ) (NPN) ( $V_{CE} = 5.0 \text{ V}, I_C = 100 \mu\text{A}$ ) (PNP)	V <sub>i(off)</sub>	-	0.6 0.58	-	Vdc
Input Voltage (on) ( $V_{CE} = 0.2 \text{ V}, I_C = 10 \text{ mA}$ ) (NPN) ( $V_{CE} = 0.2 \text{ V}, I_C = 10 \text{ mA}$ ) (PNP)	V <sub>i(on)</sub>	-	0.9 1.0	-	Vdc
Output Voltage (on) (V <sub>CC</sub> = 5.0 V, V <sub>B</sub> = 2.5 V, R <sub>L</sub> = 1.0 k $\Omega$ )	V <sub>OL</sub>	-	-	0.2	Vdc
Output Voltage (off) (V <sub>CC</sub> = 5.0 V, V <sub>B</sub> = 0.5 V, R <sub>L</sub> = 1.0 k $\Omega$ )	V <sub>OH</sub>	4.9	-	_	Vdc
Input Resistor	R1	3.3	4.7	6.1	kΩ
Resistor Ratio	R <sub>1</sub> /R <sub>2</sub>	-	-	-	

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions. 4. Pulsed Condition: Pulse Width = 300 msec, Duty Cycle ≤ 2%.



(1) SOT-363; 1.0 x 1.0 inch Pad (2) SOT-563; Minimum Pad

Figure 1. Derating Curve

## TYPICAL CHARACTERISTICS – NPN TRANSISTORS MUN5316DW1, NSBC143TPDXV6

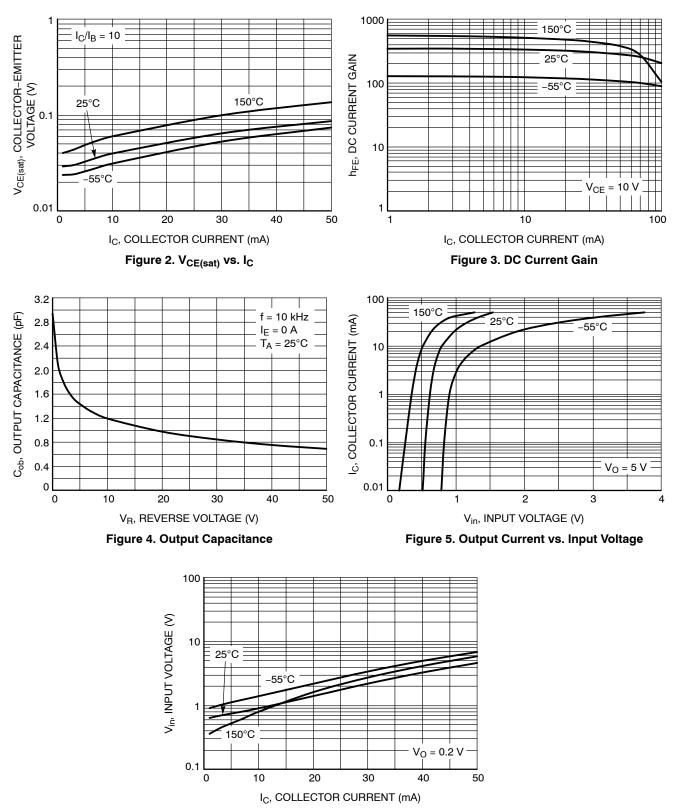


Figure 6. Input Voltage vs. Output Current

## TYPICAL CHARACTERISTICS – PNP TRANSISTORS MUN5316DW1, NSBC143TPDXV6

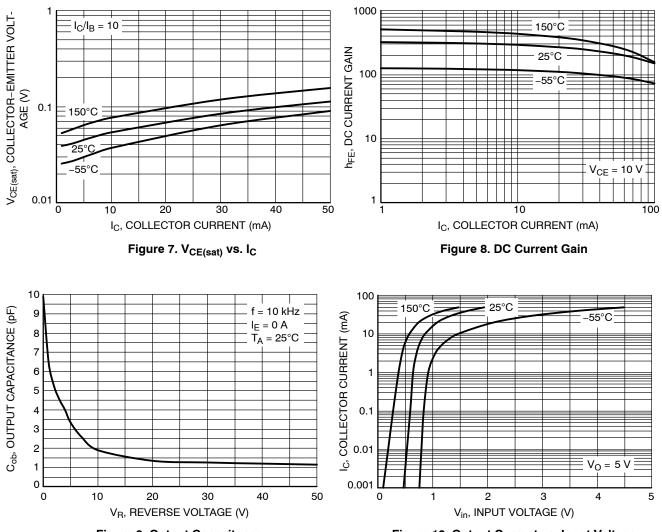
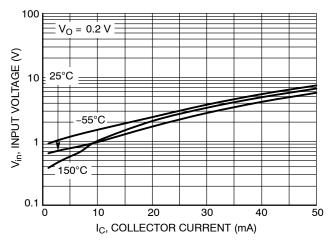


Figure 9. Output Capacitance



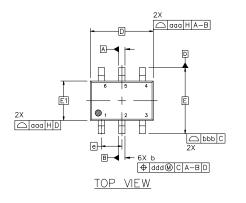




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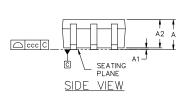
#### SC-88 2.00x1.25x0.90, 0.65P CASE 419B-02 **ISSUE Z**

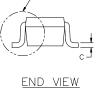
DATE 18 APR 2024



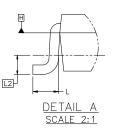


- DIMENSIONING AND TOLERANCING CONFORM TO ASME 1. Y14.5-2018.
- 2.
- ALL DIMENSION ARE IN MILLIMETERS. DIMENSIONS D AND E1 DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.20 3. PER END.
- 4. DIMENSIONS D AND E1 AT THE OUTERMOST EXTREMES OF
- DATUMS A AND B ARE DETERMINED AT DATUM H. 5.
- DIMENSIONS & AND C APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.08 AND 0.15 FROM THE TIP. 6.
- DIMENSION & DOES NOT INCLUDE DAMBAR PROTRUSION. 7 ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 TOTAL IN EXCESS OF DIMENSION & AT MAXIMUM MATERIAL CONDITION. THE DAMBAR CANNOT BE LOCATED ON THE LOWER RADIUS OF THE FOOT.





DETAIL A



	MI	LLIMETER	S		
DIM	MIN.	MAX.			
A			1.10		
A1	0.00		0.10		
A2	0.70	0.90	1.00		
b	0.15	0.20	0.25		
С	0.08	0.15	0.22		
D	2.00 BSC				
E	2.10 BSC				
E1	1.25 BSC				
е		0.65 BSC	)		
L	0.26	0.36	0.46		
L2	0.15 BSC				
aaa	0.15				
bbb	0.30				
ссс	0.10				
ddd		0.10			

6X 0.66 6X 0.30-2.50 0.65 PITCH

RECOMMENDED MOUNTING FOOTPRINT\*

FOR ADDITIONAL INFORMATION ON OUR Pb-FREE STRATEGY AND SOLDERING DETAILS, PLEASE DOWNLOAD THE ONSEMI SOLDERING AND MOUNTING TECHNIQUES REFERENCE MANUAL, SOLDERRM/D.

XXX = Specific Device Code = Date Code\* Μ

GENERIC **MARKING DIAGRAM\*** 

XXXM-

. 0

6

= Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation and/or position may vary depending upon manufacturing location.

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "•", may or may not be present. Some products may not follow the Generic Marking.

### **STYLES ON PAGE 2**

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#### SC-88 2.00x1.25x0.90, 0.65P CASE 419B-02 ISSUE Z

#### DATE 18 APR 2024

STYLE 1: PIN 1. EMITTER 2 2. BASE 2 3. COLLECTOR 1 4. EMITTER 1 5. BASE 1 6. COLLECTOR 2	STYLE 2: CANCELLED	STYLE 3: CANCELLED	STYLE 4: PIN 1. CATHODE 2. CATHODE 3. COLLECTOR 4. EMITTER 5. BASE 6. ANODE	STYLE 5: PIN 1. ANODE 2. ANODE 3. COLLECTOR 4. EMITTER 5. BASE 6. CATHODE	STYLE 6: PIN 1. ANODE 2 2. N/C 3. CATHODE 1 4. ANODE 1 5. N/C 6. CATHODE 2
STYLE 7: PIN 1. SOURCE 2 2. DRAIN 2 3. GATE 1 4. SOURCE 1 5. DRAIN 1 6. GATE 2	STYLE 8: CANCELLED	STYLE 9: PIN 1. EMITTER 2 2. EMITTER 1 3. COLLECTOR 1 4. BASE 1 5. BASE 2 6. COLLECTOR 2	STYLE 10: PIN 1. SOURCE 2 2. SOURCE 1 3. GATE 1 4. DRAIN 1 5. DRAIN 2 6. GATE 2	STYLE 11: PIN 1. CATHODE 2 2. CATHODE 2 3. ANODE 1 4. CATHODE 1 5. CATHODE 1 6. ANODE 2	STYLE 12: PIN 1. ANODE 2 2. ANODE 2 3. CATHODE 1 4. ANODE 1 5. ANODE 1 6. CATHODE 2
STYLE 13:	STYLE 14:	STYLE 15:	STYLE 16:	STYLE 17:	STYLE 18:
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2. N/C	2. GND	2. ANODE 2	2. EMITTER 2	2. EMITTER 1	2. VCC
3. COLLECTOR	3. GND	3. ANODE 3	3. COLLECTOR 2	3. COLLECTOR 2	3. VOUT2
4. EMITTER	4. IOUT	4. CATHODE 3	4. BASE 2	4. BASE 2	4. VIN2
5. BASE	5. VEN	5. CATHODE 2	5. EMITTER 1	5. EMITTER 2	5. GND
6. CATHODE	6. VCC	6. CATHODE 1	6. COLLECTOR 1	6. COLLECTOR 1	6. VOUT1
STYLE 19:	STYLE 20:	STYLE 21:	STYLE 22:	STYLE 23:	STYLE 24:
PIN 1. I OUT	PIN 1. COLLECTOR	PIN 1. ANODE 1	PIN 1. D1 (i)	PIN 1. Vn	PIN 1. CATHODE
2. GND	2. COLLECTOR	2. N/C	2. GND	2. CH1	2. ANODE
3. GND	3. BASE	3. ANODE 2	3. D2 (i)	3. Vp	3. CATHODE
4. V CC	4. EMITTER	4. CATHODE 2	4. D2 (c)	4. N/C	4. CATHODE
5. V EN	5. COLLECTOR	5. N/C	5. VBUS	5. CH2	5. CATHODE
6. V REF	6. COLLECTOR	6. CATHODE 1	6. D1 (c)	6. N/C	6. CATHODE
STYLE 25:	STYLE 26:	STYLE 27:	STYLE 28:	STYLE 29:	STYLE 30:
PIN 1. BASE 1	PIN 1. SOURCE 1	PIN 1. BASE 2	PIN 1. DRAIN	PIN 1. ANODE	PIN 1. SOURCE 1
2. CATHODE	2. GATE 1	2. BASE 1	2. DRAIN	2. ANODE	2. DRAIN 2
3. COLLECTOR 2	3. DRAIN 2	3. COLLECTOR 1	3. GATE	3. COLLECTOR	3. DRAIN 2
4. BASE 2	4. SOURCE 2	4. EMITTER 1	4. SOURCE	4. EMITTER	4. SOURCE 2
5. EMITTER	5. GATE 2	5. EMITTER 2	5. DRAIN	5. BASE/ANODE	5. GATE 1
6. COLLECTOR 1	6. DRAIN 1	6. COLLECTOR 2	6. DRAIN	6. CATHODE	6. DRAIN 1

Note: Please refer to datasheet for style callout. If style type is not called out in the datasheet refer to the device datasheet pinout or pin assignment.

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#### MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS



# ONSEMI

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Image: Style is top: WEW       SIDE VIEW       Image: Side VIEW         STYLE is top: WEW       SIDE VIEW       Image: Side VIEW         STYLE is top: WEW       SIDE VIEW       Image: Side VIEW         STYLE is top: WEW       SIDE VIEW       Image: Side VIEW         STYLE is top: WEW       SIDE VIEW       Image: Side VIEW         STYLE is top: WEW       SIDE VIEW       Image: Side VIEW         STYLE is top: Side VIEW       SIDE VIEW       Image: Side VIEW         STYLE is top: Side VIEW       SIDE VIEW       Image: Side VIEW         STYLE is top: Side VIEW       SIDE VIEW       Image: Side VIEW         STYLE is top: Side VIEW       SIDE VIEW       Image: Side VIEW         STYLE is top: Side VIEW       Side VIEW       Side VIEW         STYLE 4: STYLE 5: STYLE 5: STYLE 6: SIDE VIEW       STYLE 6: Side VIEW         STYLE 4: SIDE VIEW       SIDE VIEW       Side VIEW         SIDE VIEW       SIDE Cathodic 2: Contribute       Side VIEW         SIDE Cathodic 2: Contribute       Side VIEW       Side VIEW         STYLE 4: STYLE 5: STYLE 6: SIDE VIEW       Side VIEW       Side VIEW         SIDE VIEW       Side VIEW       Side VIEW       Side VIEW         Side Cathodic 2: Contribute       Side VIEW       Side VIEW	L				E	1.10	1.20	1.30
TOP VIEW     SIDE VIEW       TOP VIEW     SIDE VIEW       TOP VIEW     SIDE VIEW       TOP VIEW     SIDE VIEW       STATUSE 1     STYLE 2:       PIN 1 EMITTER 1     PIN 1 EMITTER 1       2 BASE 2     STATUSE 1:       3 BASE 2     S BASE 1:       3 BASE 2     S BASE 1:       4 MUTTER 2     STYLE 5:       5 COLLECTOR 1:     CATHODE 2:       4 COLLECTOR 1:     CATHODE 2:       4 COLLECTOR 1:     CATHODE 2:       3 BASE 2:     S BASE 1:       5 COLLECTOR 1:     CATHODE 2:       4 COLLECTOR 1:     CATHODE 2:       4 COLLECTOR 1:     CATHODE 2:       4 COLLECTOR 2:     CATHODE 2:       5 COLLECTOR 1:     CATHODE 2:       6 COLLECTOR 2:     CATHODE 3:       7 COLLECTOR 2:     CATHODE 3:       8 COLLECTOR 2:     CATHODE 3:       9 COLLECTOR 4:     STYLE 5:       9 COLLECTOR 5:     STYLE 6:       1:     CATHODE 3:       2:     CATHODE 3:       3:     CATHODE 3:       4:     ANDE       4:     CATHODE 3:       5:     COLLECTOR 6:       6:     CATHODE 3:       6:     CATHODE 3:       6:     CATHODE 4:				℃ ─►  ┝━─	e		0.50 BSC	
STYLE 1:       STYLE 2:       STYLE 3:         PIN 1: EMITTER 1       PIN 1: EMITTER 1       PIN 1: CATHODE 1         2: BASE 1       2: CATHODE 1       2: CATHODE 2         3: COLLECTOR 2       4: CATHODE 2       4: CATHODE 2         4: EMITTER 2       4: CATHODE 2       4: CATHODE 2         5: BASE 2       5: BASE 1       5: CATHODE 2         6: COLLECTOR 1       6: COLLECTOR 1       6: ANDE/ANDDE 2         7: STYLE 4:       STYLE 5:       STYLE 6:         9: N 1: CATHODE 2:       CATHODE 2:         2: COLLECTOR 1       6: COLLECTOR 2         3: BASE 2:       3: ANDE         3: COLLECTOR 1       6: COLLECTOR 1         4: EMITTER 3:       STYLE 5:         5: COLLECTOR 1       6: CATHODE 2:         6: COLLECTOR 3:       CATHODE 2:         7: COLLECTOR 3:       CATHODE 4:         8: COLLECTOR 3:       CATHODE 4:         9: N 1: CATHODE 4:       STYLE 9:         9: N 1: CATHODE 4:       STYLE 9:         10: 1       CATHODE 4:         10: 1       CATHODE 5:         2: ANDDE       CATHODE 4:         3: CATHODE 4:       CATHODE 5:         3: CATHODE 5:       CATHODE 5:         3: CATHODE 6:<					н	1.50	1.60	1.70
STYLE i       STYLE 2:       STYLE 3:         PIN 1. EMITTER 1       PIN 1. EMITTER 2       STYLE 3:         3. COLLECTOR 2       3. BASE 2       3. ANDE/ANDE 2         4. EMITTER 2       3. BASE 2       3. ANDE/ANDE 2         5. BASE 2       5. BASE 1       5. CATHODE 2         5. BASE 2       5. BASE 1       5. CATHODE 2         6. COLLECTOR 2       3. BASE 1       5. CATHODE 2         7. COLLECTOR 2       3. BASE 1       5. CATHODE 2         8. STYLE 5:       STYLE 5:       STYLE 6:         PIN 1. CATHODE 2       2. CATHODE 2       2. CATHODE 2         3. COLLECTOR 2       3. ANDDE 3. CATHODE 2       3. CATHODE 2         4. EMITTER 4       STYLE 5:       STYLE 6:         PIN 1. CATHODE 3. CATHODE 4. CATHODE 2       3. CATHODE 3. CATHODE 5. CATHODE 4. CATHODE 4. CATHODE 5. CATHODE 5. CATHODE 5. CATHODE 5. CATHODE 5. CATHODE 5. GATE 2       3. DRAIN 2         3. CATHODE 3. CATHODE 3. CATHODE 5. DRAIN 5. GATE 2       3. DRAIN 2       GATE 1         3. ANDDE 4. SDURCE 4. SDURCE 1       3. DRAIN 2       CATHODE 5. DRAIN 5. GATE 2         5. ANDDE 5. DRAIN 5. GATE 2       3. CATHODE 5. DRAIN 5. GATE 2       CATHODE 5. DRAIN 5. GATE 2         6. ANDDE 1       PIN 1. EMITTER 1       DRAIN 1. SDURCE 1         7. NC 2       S DRASE 1					L	0.10	0.20	0.30
STYLE i       STYLE 2:       STYLE 3:         PIN 1. EMITTER 1       PIN 1. EMITTER 2       STYLE 3:         3. COLLECTOR 2       3. BASE 2       3. ANDE/ANDE 2         4. EMITTER 2       3. BASE 2       3. ANDE/ANDE 2         5. BASE 2       5. BASE 1       5. CATHODE 2         5. BASE 2       5. BASE 1       5. CATHODE 2         6. COLLECTOR 2       3. BASE 1       5. CATHODE 2         7. COLLECTOR 2       3. BASE 1       5. CATHODE 2         8. STYLE 5:       STYLE 5:       STYLE 6:         PIN 1. CATHODE 2       2. CATHODE 2       2. CATHODE 2         3. COLLECTOR 2       3. ANDDE 3. CATHODE 2       3. CATHODE 2         4. EMITTER 4       STYLE 5:       STYLE 6:         PIN 1. CATHODE 3. CATHODE 4. CATHODE 2       3. CATHODE 3. CATHODE 5. CATHODE 4. CATHODE 4. CATHODE 5. CATHODE 5. CATHODE 5. CATHODE 5. CATHODE 5. CATHODE 5. GATE 2       3. DRAIN 2         3. CATHODE 3. CATHODE 3. CATHODE 5. DRAIN 5. GATE 2       3. DRAIN 2       GATE 1         3. ANDDE 4. SDURCE 4. SDURCE 1       3. DRAIN 2       CATHODE 5. DRAIN 5. GATE 2         5. ANDDE 5. DRAIN 5. GATE 2       3. CATHODE 5. DRAIN 5. GATE 2       CATHODE 5. DRAIN 5. GATE 2         6. ANDDE 1       PIN 1. EMITTER 1       DRAIN 1. SDURCE 1         7. NC 2       S DRASE 1						- 170	- 1	
STYLE 1:       STYLE 2:       STYLE 3:         PIN 1: ENITTER 1       2: EMITTER 1       2: EMITTER 1         2: BASE 1       3: BASE 2       3: ANDE/ANDDE 2         4: EMITTER 2       4: COLLECTOR 2       4: CATHODE 1         3: COLLECTOR 1       6: COLLECTOR 1       6: ANDE/ANDDE 2         6: COLLECTOR 1       6: COLLECTOR 1       6: ANDDE/ANDDE 1         8: SASE 2:       5: SASE 1:       5: CATHODE 2         6: COLLECTOR 1       6: COLLECTOR 1       6: ANDDE/ANDDE 1         8: CATHODE 2:       CATHODE 2:         2: COLLECTOR 2:       CATHODE 2:         3: CATHODE 2:       CATHODE 2:         4: EMITTER 4:       STYLE 5:         PIN 1: CATHODE 2:       CATHODE 2:         4: EMITTER 4:       CATHODE 2:         5: COLLECTOR 2:       CATHODE 3:         6: COLLECTOR 6:       CATHODE 4:         7: TYLE 7:       STYLE 8:         9: TYLE 7:       STYLE 8:         9: TYLE 7:       STYLE 8:         9: CALLECTOR 6:       CATHODE 2:         3: ANDE 6:       SURAIN 2:         4: CATHODE 1:       SURAIN 2:         5: ANDE 2:       SURAIN 2:         6: CATHODE 1:       SURAIN 2:         6: CATHODE 2					0.30			< 0.45
STYLE 1:       STYLE 2:       STYLE 3:         PIN 1: ENITTER 1       2: EMITTER 1       2: EMITTER 1         2: BASE 1       3: BASE 2       3: ANDE/ANDDE 2         4: EMITTER 2       4: COLLECTOR 2       4: CATHODE 1         3: COLLECTOR 1       6: COLLECTOR 1       6: ANDE/ANDDE 2         6: COLLECTOR 1       6: COLLECTOR 1       6: ANDDE/ANDDE 1         8: SASE 2:       5: SASE 1:       5: CATHODE 2         6: COLLECTOR 1       6: COLLECTOR 1       6: ANDDE/ANDDE 1         8: CATHODE 2:       CATHODE 2:         2: COLLECTOR 2:       CATHODE 2:         3: CATHODE 2:       CATHODE 2:         4: EMITTER 4:       STYLE 5:         PIN 1: CATHODE 2:       CATHODE 2:         4: EMITTER 4:       CATHODE 2:         5: COLLECTOR 2:       CATHODE 3:         6: COLLECTOR 6:       CATHODE 4:         7: TYLE 7:       STYLE 8:         9: TYLE 7:       STYLE 8:         9: TYLE 7:       STYLE 8:         9: CALLECTOR 6:       CATHODE 2:         3: ANDE 6:       SURAIN 2:         4: CATHODE 1:       SURAIN 2:         5: ANDE 2:       SURAIN 2:         6: CATHODE 1:       SURAIN 2:         6: CATHODE 2					T T	ti dh i	┼┤──┸	
STYLE 1:       STYLE 2:       STYLE 3:         PIN 1: ENITTER 1       2: EMITTER 1       2: EMITTER 1         2: BASE 1       3: BASE 2       3: ANDE/ANDDE 2         4: EMITTER 2       4: COLLECTOR 2       4: CATHODE 1         3: COLLECTOR 1       6: COLLECTOR 1       6: ANDE/ANDDE 2         6: COLLECTOR 1       6: COLLECTOR 1       6: ANDDE/ANDDE 1         8: SASE 2:       5: SASE 1:       5: CATHODE 2         6: COLLECTOR 1       6: COLLECTOR 1       6: ANDDE/ANDDE 1         8: CATHODE 2:       CATHODE 2:         2: COLLECTOR 2:       CATHODE 2:         3: CATHODE 2:       CATHODE 2:         4: EMITTER 4:       STYLE 5:         PIN 1: CATHODE 2:       CATHODE 2:         4: EMITTER 4:       CATHODE 2:         5: COLLECTOR 2:       CATHODE 3:         6: COLLECTOR 6:       CATHODE 4:         7: TYLE 7:       STYLE 8:         9: TYLE 7:       STYLE 8:         9: TYLE 7:       STYLE 8:         9: CALLECTOR 6:       CATHODE 2:         3: ANDE 6:       SURAIN 2:         4: CATHODE 1:       SURAIN 2:         5: ANDE 2:       SURAIN 2:         6: CATHODE 1:       SURAIN 2:         6: CATHODE 2						τμτ		
PIN I. EMITTER 1 2. BASE 1 2. CATHODE 1 2. CATHODE 1 2. CATHODE 2 3. COLLECTOR 2 4. CATHOLECTOR 2 5. BASE 2 5. BASE 2 5. BASE 1 6. COLLECTOR 1 6. COLLECTOR 1 6. COLLECTOR 1 7. CALLECTOR 2 5. BASE 2 5. BASE 2 5. BASE 1 6. COLLECTOR 1 6. COLLECTOR 1 7. CALLECTOR 2 7. CALLECTOR 3 7. CALLECTOR 3 7. CALLECTOR 3 7. CALLECTOR 4 7. CALLECTOR 4 7. CALLECTOR 5 7. CALLECTOR 7 7. CALLECTOR 5 7. CALLECTOR 7 7.					1.80		I	
3. CULLECTOR 2       3. BASE 2       3. ANDDE/ANDDE 2         4. EMITTER 2       4. CATHODE 2       4. CATHODE 2         5. BASE 2       5. BASE 1       5. CATHODE 2         6. COLLECTOR 1       6. COLLECTOR 1       6. ANDDE/ANDDE 1         RECOMMENDED MOUNTING FOOTPRINT*         STYLE 4:         PIN 1. CATHODE       2. CATHODE         2. COLLECTOR 2       3. ANDDE         3. BASE 2       3. ANDDE         3. BASE 2       5. CATHODE         2. COLLECTOR 2       2. CATHODE         3. BASE 3       ANDDE         3. BASE 4       4. ANDDE         4. EMITTER 4       STYLE 6:         9. COLLECTOR 5. CATHODE       3. CATHODE 2         3. BASE 4       4. ANDDE 4         4. CATHODE 5. CATHODE 5. CATHODE 5. CATHODE 6. CATHODE 6. CATHODE 6. CATHODE 7. COLDERING TECHNIQUES REFERENCE MANUAL, SOLDERING TOR SOLDERING TOR SOLDERING AND MOUNTING TECHNICE REVIEW MANUAL, SOLDERING MANUAL, SOLDERING POLYDALL, SOLDERING MANUAL, SOLDERING MANUAL, SOLDERING MANUAL, SOLDERING MANUAL, SOLDERING DIAGRAM*         YILE 7:       STYLE 8:       STYLE 9:         9. NAIDE 2       3. GATE 2       SOLRCE 2         3. CATHODE 3. CATHODE 4. SDURCE 4. SDURCE 2       SOLRAIN 1         3. CATHODE 5. DRAIN 5. GATE 2       SORAIN 1         4. CATHODE				E 1			+-	
5. BASE 2       5. BASE 1       5. CATHIDE 2       0.30         6. COLLECTOR 1       6. COLLECTOR 1       6. ANDE/ANDDE 1       RECOMMENDED MOUNTING FOOTPRINT*         STYLE 4:       STYLE 5:       STYLE 6:       PIN 1. CATHIDDE       PIN 1. CATHIDDE         2. COLLECTOR       2. CATHIDDE       2. CATHIDDE       3. BASE       3. ANDDE         3. BASE       3. ANDDE       3. CATHIDDE       3. CATHIDDE       5. CATHIDDE         4. EMITTER       4. ANDDE       4. CATHIDDE       5. CATHIDDE       5. CATHIDDE         5. COLLECTOR       5. CATHIDDE       5. CATHIDDE       5. CATHIDDE       5. CATHIDDE         5. COLLECTOR       6. CATHIDDE       5. CATHIDDE       5. CATHIDDE       5. CATHIDDE         5. COLLECTOR       6. CATHIDDE       6. CATHIDDE       6. CATHIDDE       6. CATHIDDE         2. ANDDE       2. DRAIN       2. GATE 1       2. MANDA       MARKING DIAGRAM*         STYLE 7:       STYLE 8:       STYLE 9:       MARKING DIAGRAM*       MARKING DIAGRAM*         2. ANDDE       2. DRAIN       3. DRAIN 1       2. GATE 2       MARKING DIAGRAM*         3. CATHIDDE       3. DRAIN       5. DIRCE 1       XX = Specific Device Code       M = Month Code         4. CATHIDDE 1       FIN 1. EMITTER 2						$\frac{1}{1}$		
STYLE 4:       STYLE 5:       STYLE 6:       *       FOR ADDITIONAL INFORMATION ON OUR Pb-FREE         PIN 1. CATHIDDE       PIN 1. CATHIDDE       2. CATHIDDE       2. CATHIDDE       3. CATHIDDE         3. BASE       3. ANDDE       3. CATHIDDE       3. CATHIDDE       4. CATHIDDE       4. CATHIDDE         5. COLLECTOR       5. CATHIDDE       4. CATHIDDE       4. CATHIDDE       5. CATHIDDE       5. CATHIDDE         6. COLLECTOR       6. CATHIDDE       5. CATHIDDE       6. CATHIDDE       6. CATHIDDE       6. CATHIDDE         7. CATHIDDE       8. CATHIDDE       6. CATHIDDE       6. CATHIDDE       6. CATHIDDE       6. CATHIDDE         8. ANDDE       9. CATHIDDE       6. CATHIDDE       6. CATHIDDE       6. CATHIDDE       6. CATHIDDE         8. ANDDE       2. DRAIN       2. GATE 1       3. DRAIN 2       6. CATHIDDE       6. CATHIDDE         2. ANDDE       3. DRAIN       5. GATE 2       3. CATHIDE       XX = Specific Device Code         M       M = Month Code       •       = D-Free Package         STYLE 10:       STYLE 11:       FTHIS INFORMATION IS generic. Please refer to         9. N/C       2. BASE 2       3. CATHIDDE       9. COLLECTUR 1         4. ANDDE 1       9. ASEE 1       0. CATHIDE       PD-Free indicat						′ / 		
STYLE 4:       STYLE 5:       STYLE 6:       *       FOR ADDITIONAL INFORMATION ON OUR Pb-FREE         PIN 1. CATHIDDE       2. CATHIDDE       2. ANIDDE       3. BASE       3. ANDDE       3. CATHIDDE         3. BASE       3. ANDDE       3. CATHIDDE       3. CATHIDDE       3. CATHIDDE       3. CATHIDDE         4. EMITTER       4. ANDDE       4. CATHIDDE       5. CATHIDDE       5. CATHIDDE       5. CATHIDDE         5. COLLECTOR       6. CATHIDDE       5. CATHIDDE       5. CATHIDDE       6. CATHIDDE       6. CATHIDDE         6. COLLECTOR       6. CATHIDDE       5. CATHIDDE       6. CATHIDDE       6. CATHIDDE       6. CATHIDDE         3. CATHIDDE       3. CATHIDDE       3. CATHIDDE       6. CATHIDDE       6. CATHIDDE       6. CATHIDDE         3. CATHIDDE       3. GATE       3. DRAIN       2. GATE 1       3. DRAIN 2       4. CATHIDDE       4. SDURCE       2. ANDICE         3. CATHIDDE       4. CATHIDDE       5. GATE 2       3. DRAIN 1       XX = Specific Device Code       M = Month Code       -       = Pb-Free Package         STYLE 10'       STYLE 11'       FIN 1. CATHIDE       2. BASE 2       3. CATHIDDE       *This information is generic. Plase refer to device data sheet for actual part marking.         2. N/C       3. CATHIDDE 2       3. CATH	6. COLLECTOR 1	6. COLLECTOR 1	6. ANDDE/	ANDDE 1				
PIN 1. COLLECTOR       PIN 1. CATHODE       PIN 1. CATHODE       2. ANDDE       3. ANDDE       3. CATHODE       3. ANDDE       3. CATHODE       4. CATHODE       4. CATHODE       4. CATHODE       4. CATHODE       4. CATHODE       4. CATHODE       6. CATHODE       6. CATHODE       6. CATHODE       6. CATHODE       4. CATHODE       6. CA					RECOMMENDE	ED MOUN	TING FOO	TPRINT*
2. CULLECTUR 2. CAIHUDE 2. ANUDE 3. CATHODE 4. CATHODE 5. CATHODE 5. CATHODE 5. CATHODE 5. CATHODE 6. CATHODE 6. CATHODE 6. CATHODE 6. CATHODE 6. CATHODE 7. CATHODE	PIN 1. COLLECTOR	PIN 1. CATHODE	PIN 1. CATHODE	* F(				
4. EMITTER       4. ANDDE       4. CATHEDE       MANUAL, SOLDERRM/D.         5. COLLECTOR       6. CATHEDE       5. CATHEDE       GENERIC         6. COLLECTOR       6. CATHEDE       6. CATHEDE       MARKING DIAGRAM*         STYLE 7:       STYLE 8:       STYLE 9:       MARKING DIAGRAM*         PIN 1. CATHEDE       2. DRAIN       2. GATE       3. DRAIN 2         3. CATHEDE       3. GATE       3. DRAIN 2       1         4. CATHEDE       4. SDURCE       4. SDURCE 2       1         5. ANDDE       5. DRAIN       5. GATE 2       XX = Specific Device Code         M = Month Code       •       = Pb-Free Package         STYLE 10:       STYLE 11:       XX = Specific Device Code         PIN 1. CATHEDE       1. DEMITTER 2       *This information is generic. Please refer to         2. N/C       2. BASE 2       device data sheet for actual part marking.         3. CATHEDE 1       PIN 1. EMITTER 1       or may not be present. Some products may         3. CATHEDE 2       4. EMITTER 1       or may not be present. Some products may         3. N/C       5. BASE 1       or may not be present. Some products may         4. ANDDE 2       4. EMITTER 1       or may not be present. Some products may         5. N/C       5. BASE 1	3. BASE	3. ANDDE	3. CATHOD	Ł	OWNLOAD THE	ON SEMIC	ONDUCTOR	SOLDERING
GENERIC MARKING DIAGRAM*         STYLE 7:       STYLE 8:       STYLE 9:         PIN 1. CATHODE       PIN 1. DRAIN       PIN 1. SDURCE 1         2. ANDDE       2. DRAIN       2. GATE 1         3. CATHODE       3. GATE       3. DRAIN 2         4. CATHODE       4. SDURCE       4. SDURCE 4. SDURCE 2         5. ANDDE       5. DRAIN       5. GATE 2         6. CATHODE       6. DRAIN       6. DRAIN 1         7       File       * Style 10:         8. STYLE 10:       STYLE 11:       * = Pb-Free Package         STYLE 10:       STYLE 11:         PIN 1. CATHODE 1       PIN 1. EMITTER 2         2. N/C       2. BASE 2         3. CATHODE 2       3. COLLECTOR 1         9. N/C       3. CALLECTOR 1         4. ANDDE 2       4. EMITTER 1         5. N/C       SASE 1         6. ANDDE 1       6. COLLECTOR 2         9. N/C       SASE 1         6. ANDDE 1       6. COLLECTOR 2         9. N/C       SASE 1         6. ANDDE 1       6. COLLECTOR 2         9. N/C       SASE 1         6. ANDDE 1       6. COLLECTOR 2         9. ONTROLECTOR 2       NOT 5. SASE 1         6. A	5. COLLECTOR	5. CATHODE	5. CATHOD	E				
STYLE 7:       STYLE 8:       STYLE 9:       MARKING DIAGRAM*         PIN 1. DRAIN       PIN 1. SDURCE 1      GATE 1      GATE 1         2. ANDDE       2. DRAIN       2. GATE 1      GATE 2         3. CATHDDE       3. GATE       3. DRAIN 2      GATE 2         4. CATHDDE       4. SDURCE 4. SDURCE 2       1      GATE 2         5. ANDDE       5. GATE 2      GATE 2       1         6. CATHDDE       6. DRAIN       6. DRAIN 1       XX = Specific Device Code         M       = Month Code       -       -       = Pb-Free Package         STYLE 10:       STYLE 11:       *This information is generic. Please refer to         2. N/C       2. BASE 2       device data sheet for actual part marking.         3. CATHDDE 2       3. COLLECTOR 1       Pb-Free indicator, "G" or microdot "•", may         4. ANDDE 2       3. COLLECTOR 1       Pb-Free indicator, "G" or microdot "•", may         5. N/C       5. BASE 1       or may not be present. Some products may         6. ANDDE 1       6. COLLECTOR 2       Electronic versions are uncontrolled except when accessed directly from the Document Repository.         Printed versions are uncontrolled except when stamped "CONTROLLED" in red.       Pinted versions are uncontrolled except when stamped "CONTROLLED"	6. COLLECTOR	6. CATHODE	6. CATHOD	E		GENER	C	
PIN 1. CATHIDE       PIN 1. DRAIN       PIN 1. SDURCE 1         2. ANDDE       2. DRAIN       2. GATE 1         3. CATHIDDE       3. GATE       3. DRAIN 2         4. CATHIDDE       4. SDURCE       4. SDURCE 2         5. ANDDE       5. DRAIN       5. GATE 2         6. CATHIDDE       6. DRAIN       6. DRAIN         7       6. DRAIN       6. DRAIN         8. CATHIDDE       6. DRAIN       6. DRAIN         9. OLATHIDE       6. DRAIN       6. DRAIN         9. CATHIDDE       6. DRAIN       6. DRAIN         9. CATHIDDE       1. EMITTER 2       XX = Specific Device Code         M       = Month Code       =         9. N/C       2. BASE 2       device data sheet for actual part marking.         3. CATHIDDE 2       3. COLLECTOR 1       Pb-Free indicator, "G" or microdot "•", may         4. ANDDE 2       4. EMITTER 1       or may not be present. Some products may         5. N/C       5. BASE 1       or may not be present. Some products may         6. ANDDE 1       6. COLLECTOR 2       Electronic versions are uncontrolled except when accessed directly from the Document Repository.         Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red. <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>								
3. CATHIDE 4. CATHIDE 5. ANDDE 5. ANDDE 6. DRAIN 5. GATE 2 5. ANDDE 6. DRAIN 6. DRAIN 5. GATE 2 5. ANDDE 6. DRAIN 6. DRAIN 7. STYLE 10: 7. N/C 7. SASE 2 7. CATHIDE 7. N/C 7. SASE 2 7. CATHIDE 7. N/C 7. SASE 2 7. CATHIDE 7. N/C 7. SASE 2 7. CATHIDE 7. N/C 7. SASE 1 7. COLLECTOR 7.	PIN 1. CATHODE	PIN 1. DRAIN	PIN 1. SOURCE	1			1	
5. ANDDE       5. DRAIN       5. GATE 2         6. CATHEDDE       6. DRAIN       6. DRAIN 1         XX       = Specific Device Code         M       = Month Code         •       = Pb-Free Package         STYLE 10:       STYLE 11:         PIN 1. CATHEDDE 1       PIN 1. EMITTER 2         2. N/C       2. BASE 2         3. CATHEDDE 2       3. COLLECTER 1         4. ANEDDE 2       4. EMITTER 1         5. N/C       5. BASE 1         6. ANEDE 1       6. COLLECTER 2         Electronic versions are uncontrolled except when accessed directly from the Document Repository.         Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.	3. CATHODE	3. GATE	3. DRAIN â			XXM•		
STYLE 10:       STYLE 11: <ul> <li>PD-Free Package</li> <li>*This information is generic. Please refer to</li> <li>ACTHDDE 1</li> <li>PIN 1. EMITTER 2</li> <li>CATHDDE 2</li> <li>CDLLECTOR 1</li> <li>PD-Free indicator, "G" or microdot "=", may</li> <li>or may not be present. Some products may</li> <li>N/C</li> <li>SBASE 1</li> <li>COLLECTOR 2</li> </ul> <li>DOCUMENT NUMBER:</li> <li>98AON11126D</li> <li>Electronic versions are uncontrolled except when accessed directly from the Document Repository.</li> <li>Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.</li>							]	
STYLE 10:       STYLE 11:       - = Pb-Free Package         PIN 1. CATHIDE 1       PIN 1. EMITTER 2       *This information is generic. Please refer to         2. N/C       2. BASE 2       device data sheet for actual part marking.         3. CATHIDE 2       3. COLLECTOR 1       Pb-Free indicator, "G" or microdot "=", may         4. ANDDE 2       4. EMITTER 1       or may not be present. Some products may         5. N/C       5. BASE 1       ort follow the Generic Marking.         6. ANDDE 1       6. COLLECTOR 2       Electronic versions are uncontrolled except when accessed directly from the Document Repository.         Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.	6. CATHODE	6. DRAIN	6. DRAIN 1	L		•		
PIN 1. CATHIDE 1       PIN 1. EMITTER 2       *This information is generic. Please refer to device data sheet for actual part marking.         2. N/C       2. BASE 2       device data sheet for actual part marking.         3. CATHIDE 2       3. CDLLECTOR 1       Pb-Free indicator, "G" or microdot "•", may         4. ANDDE 2       4. EMITTER 1       or may not be present. Some products may         5. N/C       5. BASE 1       not follow the Generic Marking.         6. ANDDE 1       6. CDLLECTOR 2       Electronic versions are uncontrolled except when accessed directly from the Document Repository.         Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.       Image: Control of the co								
3. CATHEDE 2       3. CELLECTER 1       Pb-Free indicator, "G" or microdot "•", may         4. ANDDE 2       4. EMITTER 1       or may not be present. Some products may         5. N/C       5. BASE 1       not follow the Generic Marking.         6. ANDDE 1       6. CELLECTER 2       not follow the Generic Marking.         DOCUMENT NUMBER:       98AON11126D       Electronic versions are uncontrolled except when accessed directly from the Document Repository.	PIN 1. CATHODE 1	PIN 1. EMITTER 2				, e		
4. ANDDE 2       4. EMITTER 1       or may not be present. Some products may not follow the Generic Marking.         5. N/C       5. BASE 1       not follow the Generic Marking.         6. ANDDE 1       6. CDLLECTOR 2       Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.	3. CATHODE 2	3. COLLECTOR 1						
6. ANDDE 1       6. CDLLECTOR 2       not follow the Generic Marking.         DOCUMENT NUMBER:       98AON11126D       Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.					or may not be p	resent. So	me product	
Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.	6. ANDE 1 6. COLLECTOR 2 not follow the Generic Marking.							
DESCRIPTION: SOT-563-6 1.60x1.20x0.55, 0.50P PAGE 1 OF 1				Printed versions are un				COPY" in red.
	DESCRIPTI	ON:   SOT-563-6 1	.60x1.20x0.55	, 0.50P				PAGE 1 OF 1

SOT-563-6 1.60x1.20x0.55, 0.50P CASE 463A

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