

NUP45V6P5

低キャパシタンスのクワッドESD保護ダイオード・アレイ

このサージ保護デバイスは、過渡過電圧保護が必要なアプリケーション向けに設計されています。ワイヤレス・ヘッドセット、PDA、デジタル・カメラ、コンピュータ、プリンタ、通信システムなどの精密機器、およびその他のアプリケーションで使用することを目的としています。集積型デザインにより、パッケージを1個使用するだけで、4本の独立したラインに対して非常に効率が高く信頼性に優れた保護を提供します。このデバイスは、ボード・スペースが貴重な場合に最適です。

特長

- ESD保護: IEC61000-4-2: レベル4
- 4つの独立した単一方向保護構成
- 低リーク電流 < 1 mA @ 3 V
- 小型SOT-953 SMTパッケージ
- 低キャパシタンス
- 鉛フリー・デバイス

利点

- 業界標準のESD保護を提供: IEC 61000、HBM
- 4本のラインを過渡電圧状態から保護
- システムの消費電力を最小化
- PCBボード・スペースを最小化

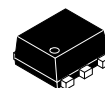
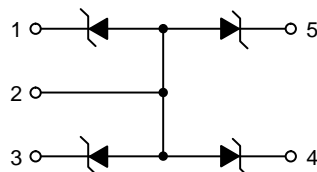
代表的アプリケーション

- 携帯電話および携帯電子機器
- シリアルおよびパラレル・ポート
- マイクロプロセッサ使用機器
- ノートブック、デスクトップ、サーバ



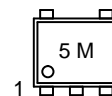
ON Semiconductor®

www.onsemi.jp



SOT-953
CASE 526AE

MARKING DIAGRAM



5 = Specific Device Code
M = Date & Assembly Code

ORDERING INFORMATION

Device	Package	Shipping†
NUP45V6P5T5G	SOT-953 (Pb-Free)	8000 / Tape & Reel

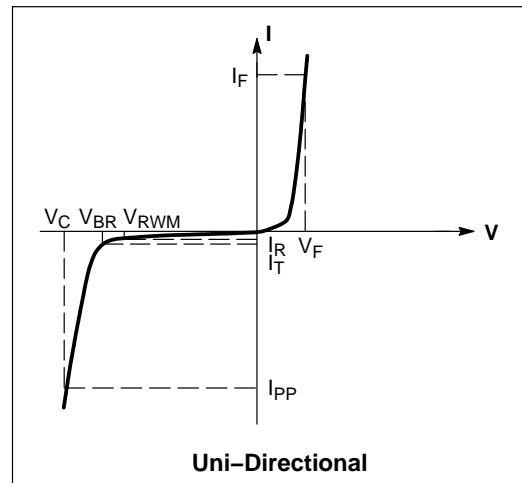
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

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ELECTRICAL CHARACTERISTICS

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
ΘV_{BR}	Maximum Temperature Coefficient of V_{BR}
I_F	Forward Current
V_F	Forward Voltage @ I_F
Z_{ZT}	Maximum Zener Impedance @ I_{ZT}
I_{ZK}	Reverse Current
Z_{ZK}	Maximum Zener Impedance @ I_{ZK}



MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction-to-Ambient Above 25°C , Derate	$R_{\theta JA}$	560 4.5	$^\circ\text{C}/\text{W}$ $\text{mW}/^\circ\text{C}$
Maximum Junction Temperature	T_{Jmax}	150	$^\circ\text{C}$
Operating Junction and Storage Temperature Range	$T_J T_{stg}$	-55 to +150	$^\circ\text{C}$
Lead Solder Temperature (10 seconds duration)	T_L	260	$^\circ\text{C}$
Human Body Model (HBM) Machine Model (MM)	ESD	8000 400	V

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.

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(参考訳)

最大定格を超えるストレスは、デバイスにダメージを与える危険性があります。これらの定格値を超えた場合は、デバイスの機能性を損ない、ダメージが生じ、信頼性に影響を及ぼす危険性があります。

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

Device	Device Marking	Breakdown Voltage V_{BR} @ 1 mA (Volts)			Leakage Current I_{RM} @ V_{RM}		Typ Capacitance @ 0 V Bias (pF) (Note 1)		Typ Capacitance @ 3 V Bias (pF) (Note 1)		V_C (V) @ $I_{PP} = 1$ A (Note 2)
		Min	Nom	Max	V_{RWM}	I_{RWM} (μA)	Typ	Max	Typ	Max	Max
NUP45V6P5	5	5.3	5.6	5.9	3.0	1.0	13	17	7.0	11.5	10.5

1. Capacitance of one diode at $f = 1$ MHz, $T_A = 25^\circ\text{C}$.

2. Surge current waveform per Figure 3.

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TYPICAL ELECTRICAL CHARACTERISTICS

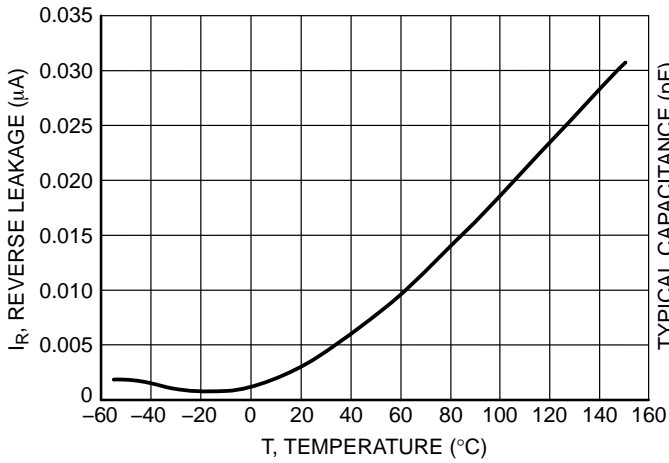


Figure 1. Reverse Leakage Current versus Temperature

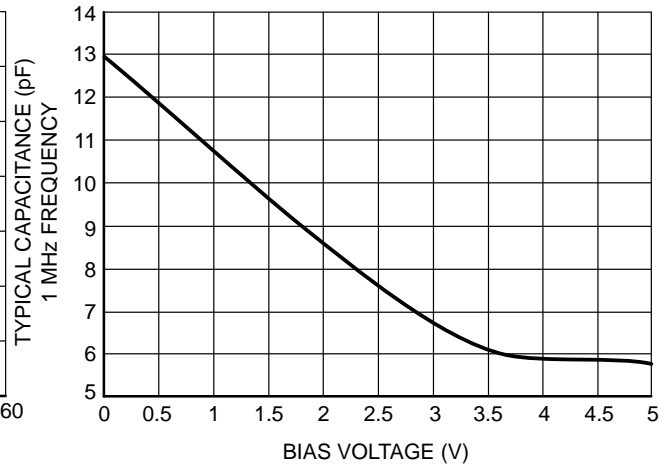


Figure 2. Capacitance

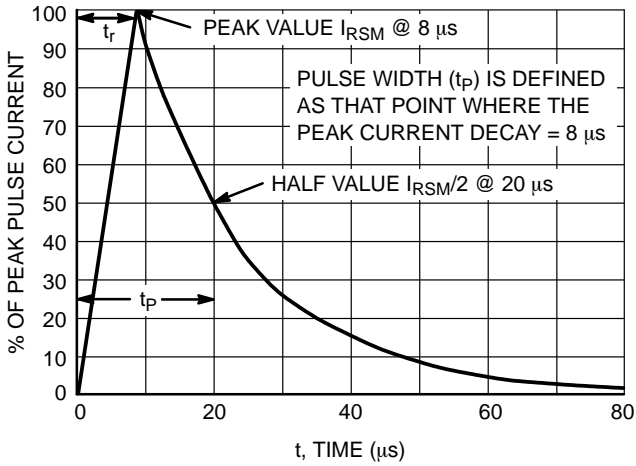


Figure 3. $8 \times 20 \mu\text{s}$ Pulse Waveform

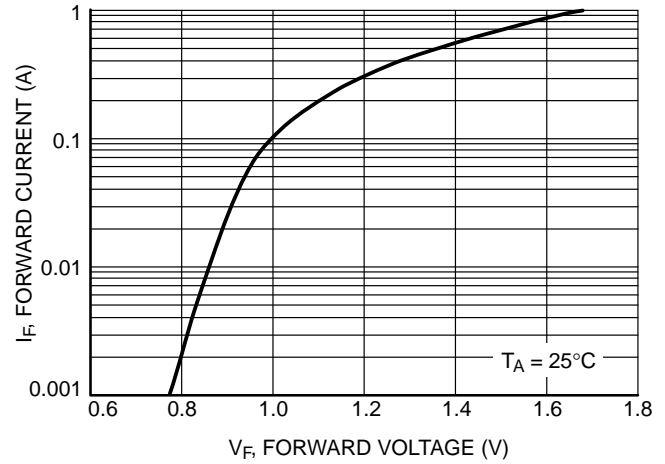


Figure 4. Forward Voltage

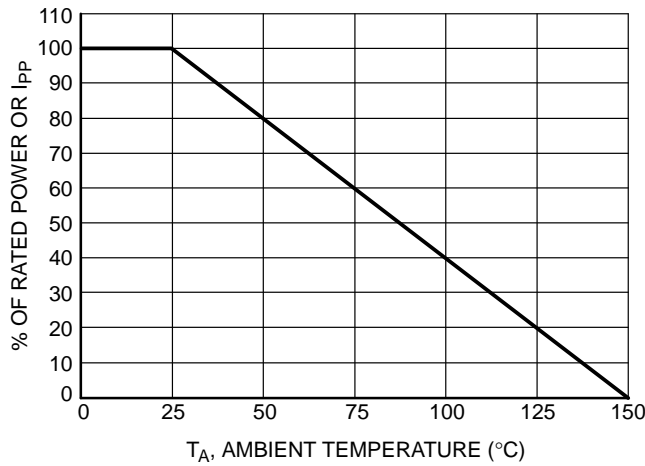
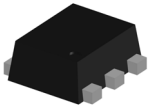


Figure 5. Power Derating Curve

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS



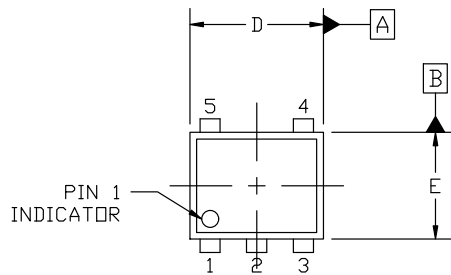
SOT-953 1.00x0.80x0.37, 0.35P
CASE 527AE
ISSUE F

DATE 17 JAN 2024

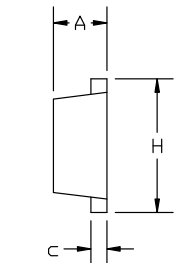
NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

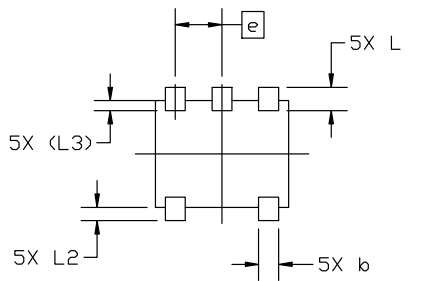
MILLIMETERS			
DIM	MIN	NOM	MAX
A	0.34	0.37	0.40
b	0.10	0.15	0.20
C	0.07	0.12	0.17
D	0.95	1.00	1.05
E	0.75	0.80	0.85
e	0.35 BSC		
H	0.95	1.00	1.05
L	0.125	0.175	0.225
L2	0.05	0.10	0.15
L3	0.075 (REF)		



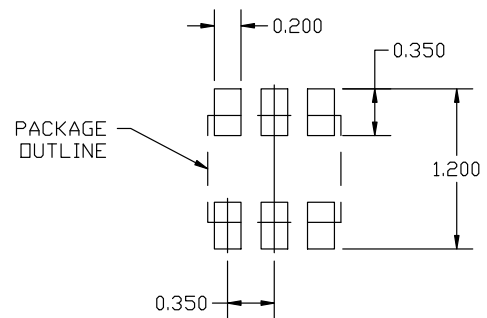
TOP VIEW



SIDE VIEW



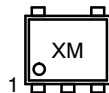
BOTTOM VIEW



RECOMMENDED MOUNTING FOOTPRINT

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

GENERIC MARKING DIAGRAM*



X = Specific Device Code
M = Month Code

*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.

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