NUP5150MU

ESD Protection Diode Array, 5-Line

This 5-line surge protection array is designed for applications requiring surge protection capability. It is intended for use in over-transient voltage and ESD sensitive equipment such as cell phones, portables, computers, printers and other applications. This device features a monolithic common anode design which protects five independent lines in a single UDFN package. This device is ideal for situations where board space is at a premium.

Features

- Protects up to 5 Lines in a Single UDFN Package
- ESD Rating of Class 3B (Exceeding 8 kV) per Human Body Model
- Compliance with IEC 61000-4-2
- This is a Pb–Free Device

Applications

- Hand Held Portable Applications
- Serial and Parallel Ports
- Notebooks, Desktops, Servers

MAXIMUM RATINGS (T_J = 25°C, unless otherwise specified)

Symbol	Rating	Value	Unit
TJ	Operating Junction Temperature Range	-40 to 125	°C
T _{STG}	Storage Temperature Range	-55 to 150	°C
TL	Lead Solder Temperature – Maximum (10 seconds)	260	°C
ESD	Human Body Model (HBM) IEC 61000-4-2 Contact (ESD)	16000 8000	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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UDFN6 5-LINE SURGE PROTECTION

PIN ASSIGNMENT





M = Month Code

*Specific Device Code orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping [†]
NUP5150MUTBG	UDFN6 (Pb-Free)	3000/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 _J = 25°C, unless otherwise specified)
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Parameter	Conditions	Symbol	Min	Тур	Max	Unit
Reverse Working Voltage	(Note 1)	V _{RWM}		-	5.0	V
Breakdown Voltage	I _T = 1 mA, (Note 2)	V _{BR}	6.2	6.8	7.2	V
Reverse Leakage Current	V _{RWM} = 3 V	I _R	-		0.1	μΑ
Capacitance	$V_R = 0 V$, f = 1 MHz (Line to GND)	CJ	-	12	15	pF

Surge protection devices are normally selected according to the working peak reverse voltage (V_{RWM}), which should be equal or greater than the DC or continuous peak operating voltage level.
 V_{BR} is measured at pulse test current I_T.

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Figure 1. Capacitance

Figure 2. Typical Reverse Current vs. Reverse Voltage



Figure 3. Typical Forward Current vs. Forward Voltage



<u> </u>	UDFN6, 1.20x1.00x0.50, 0.40P CASE 517AA				
	ISSUE E		Γ	DATE 09 M	IAY 2025
	NOTES				
	1. DIMENSIONING AND TOLE		AS PER	ASME Y14	.5M, 2018.
B	3. DIMENSION & APPLIES T	O PLATED	TERMINAL	AND IS M	MEASURED
	BETWEEN 0.25 AND 0.3 4. COPLANARITY APPLIES TERMINALS.	0mm FROM TO TH EXP	M TERMINA POSED PAE	NL.) AS WELL	. AS THE
			MILLIMETERS		
T T	Cu Mold Compound		MIN	NOM	МАХ
Pin 1 Caa		A	0.45	0.50	0.55
TOP VIEW 2X	$\begin{array}{c} \begin{array}{c} \\ \end{array} \\ \hline \end{array} \\ \hline \end{array} \\ \hline \end{array} \\ \hline \end{array} \\ \begin{array}{c} \end{array} \\ \hline \end{array} \\ \begin{array}{c} \\ \end{array} \\ \hline \end{array} \\ \begin{array}{c} \\ \end{array} \\ \hline \end{array} \\ \begin{array}{c} \\ \end{array} \\ \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ $	A1	0.00		0.05
	A1	A3	(-
	DETAIL "B" Scale 2:1	b	0.15	0.20	0.25
	Side View	D		1.20 BSC	
	(Optional)	E		1.00 BSC	
	− SEATING PLANE	е		0.40 BSC	
SIDE VIEW D		L	0.30	0.35	0.40
		L1	0.00		0.15
∕─DETAIL "A"		L2	0.40	0.45	0.50
	DETAIL "A"	L3		0.14 REF	
	Bottom View	L4		0.116 REF	-
	(Optional)	TOLER	ANCE FO	RM & PO	SITION
		aaa		0.10	
		bbb		0.10	
	₽ ₽₽	ccc		0.10	
	(L4)	ddd		0.05	
	PIN 1	eee		0.08	
BOITOM VIEW	Chamfer Dimension	6X	0.22	-	
	Pa C	ickage —— Dutline			- 1.07
GENERIC MARKING DIAGRAM*					
XXM		0.	52	5X 0.4	2
		RECOMMEN	NDED MOU	NTING FOO	TPRINT
 XX = Specific Device Code M = Date 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 		*For ac Pb-Free s please do and Mou N	dditional info strategy and ownload the unting Techr Manual, SOLI	ormation on d soldering c onsemi Solo niques Refer DERRM/D.	our details, dering ence

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