

**Features**

- Ultra Low Capacitance
- Low Operating Voltage
- Low Clamping Voltage
- Ultra Low Leakage: nA Level
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

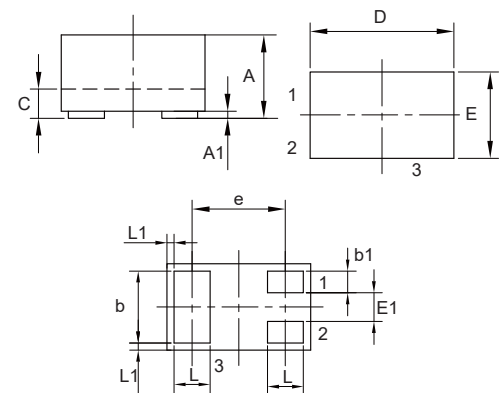
**Maximum Ratings**

IEC61000-4-2(ESD)	Air	±25KV
	Contact	±20KV
Peak Pulse Power (8/20µs)	PPK	75W
Peak Pulse Current (8/20µs)(Note 2)	IPP	5A
Operating Junction Temperature Range	T <sub>J</sub>	-55°C to +125°C
Storage Temperature Range	T <sub>STG</sub>	-55°C to +150°C

Note:  
 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.  
 2. Non-repetitive current pulse 8/20 µs exponential decay waveform according to IEC61000-4-5.

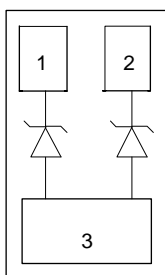
**ESD Protection Device**

**DFN1006-3**

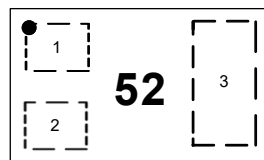


DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.018	0.022	0.45	0.55	
A1	0.000	0.002	0.00	0.05	
b	0.018	0.022	0.45	0.55	
b1	0.004	0.008	0.10	0.20	
c	0.005	0.007	0.12	0.18	
D	0.037	0.041	0.95	1.05	
E	0.022	0.026	0.55	0.65	
E1	0.006	0.010	0.15	0.25	
e	0.026		0.65		TYP.
L	0.008	0.012	0.20	0.30	
L1	0.0002		0.05		TYP.

**Internal Structure**

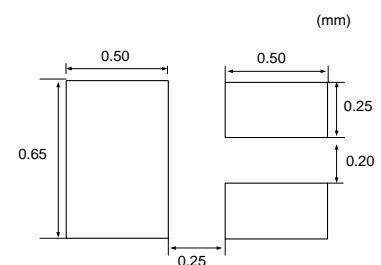


**Marking Code**

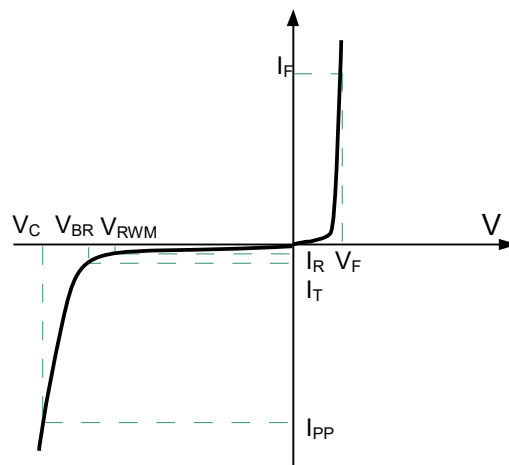


**Transparent top view**

**SUGGESTED SOLDER PAD LAYOUT**



Symbol	Parameter
VRWM	Peak Reverse Working Voltage
IR	Reverse Leakage Current @ VRWM
VBR	Breakdown Voltage @ IT
IT	Test Current
IPP	Maximum Reverse Peak Pulse Current
VC	Clamping Voltage @ IPP
PPP	Peak Pulse Power
CJ	Junction Capacitance
IF	Forward Current
VF	Forward Voltage @ IF



**Electrical Characteristics per line @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	$V_{RWM}$	Pin 1 or Pin 2 to Pin 3 and Between Pin 1 and Pin 2			5	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$ , Pin 1 or Pin 2 to Pin 3 and Between Pin 1 and Pin 2	6.4			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5\text{V}$ , Pin 1 or Pin 2 to Pin 3 and Between Pin 1 and Pin 2		10	100	nA
Forward Voltage	$V_F$	$I_F = 10\text{mA}$ , Pin 1 or Pin 2 to Pin 3			1.2	V
Clamping Voltage <sup>Note1</sup>	$V_C$	$I_{PP} = 1\text{A}$ , $t_p = 8/20\mu\text{s}$ , Pin 1 or Pin 2 to Pin 3			10	V
Clamping Voltage <sup>Note1</sup>	$V_C$	$I_{PP} = 5\text{A}$ , $t_p = 8/20\mu\text{s}$ , Pin 1 or Pin 2 to Pin 3			15	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$ , Between Pin 1 and Pin 2		0.3	0.5	pF
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$ , Pin 1 or Pin 2 to Pin 3			0.8	pF

Note:

1. Non-repetitive current pulse 8/20 $\mu\text{s}$  exponential decay waveform according to IEC61000-4-5.

## Curve Characteristics

Fig. 1 - 8 X 20 $\mu$ s Pulse Waveform

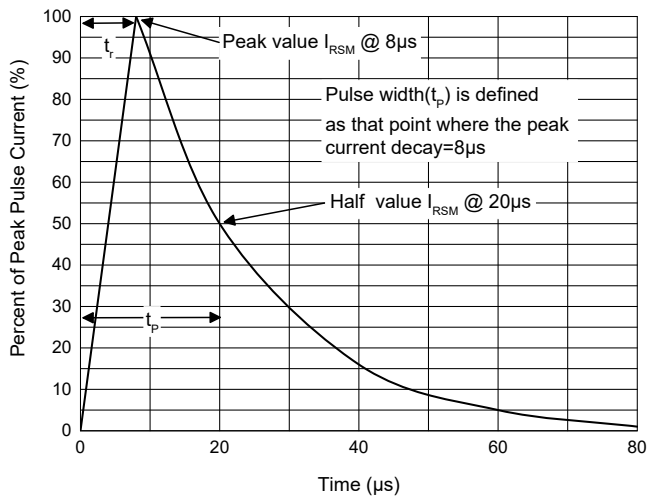


Fig. 2 - Non-Repetitive Peak Pulse Power

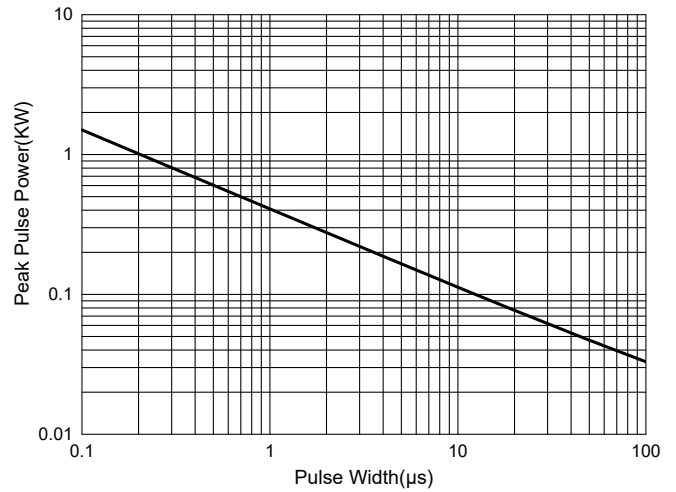


Fig. 3 - Capacitance Characteristics

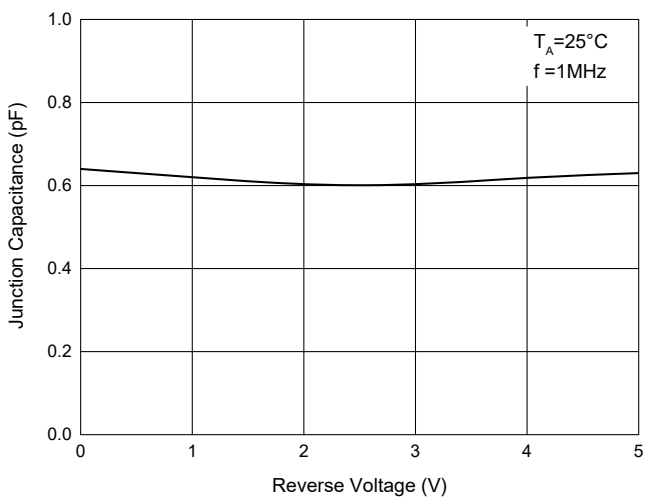


Fig. 4 - Clamping Voltage Characteristics

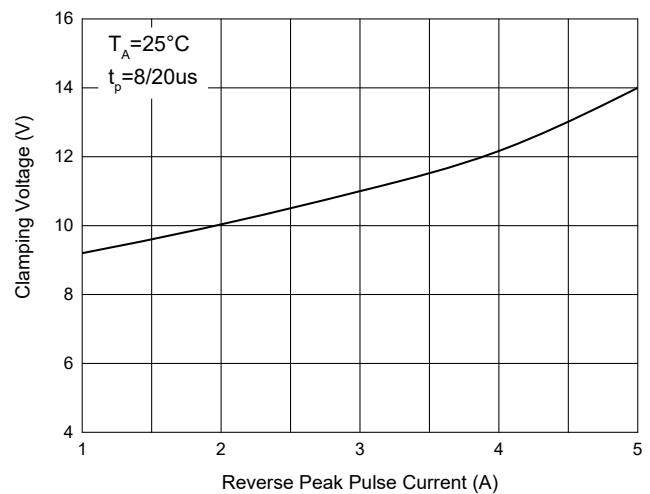


Fig. 5 - TLP Measurement

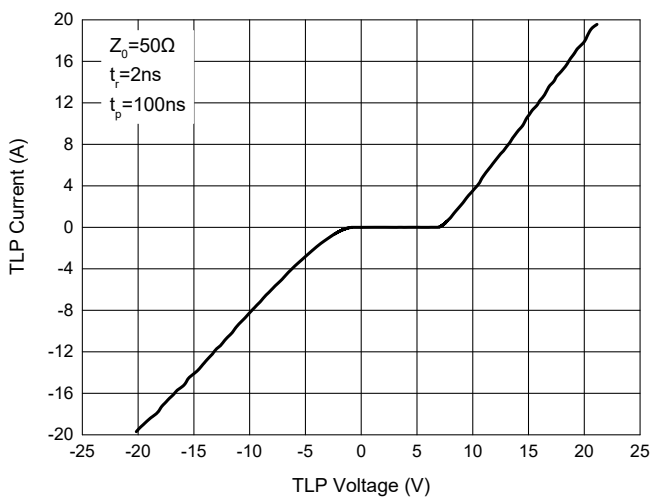
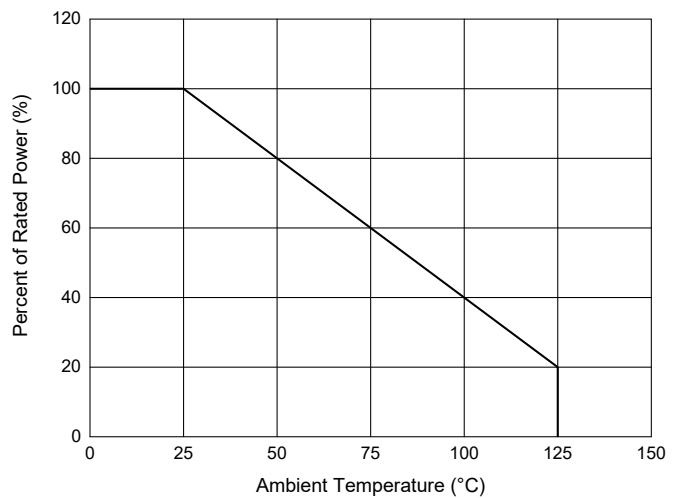


Fig. 6 - Pulse Derating Curve



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 10Kpcs/Reel
Part Number-TPQ3	Tape&Reel: 10Kpcs/Reel

For packaging details, go to our website at <https://www.mccsemi.com/pdf/ProductPackaging/DFN1006-3%20Package.pdf>

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