

Features

- Uni-Directional ESD Protection of One Line
- High Peak Pulse Current Capability
- Low Clamping Voltage
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

- Junction Temperature Range: -40°C to +125°C
- Storage Temperature Range: -55°C to +150°C

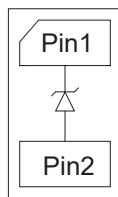
MCC Part Number	Device Marking
ESD0751P6	7DA
ESD1051P6	aDA
ESD1251P6	cDA
ESD1551P6	fDA
ESD1851P6	iDA
ESD2451P6	oDA

IEC61000-4-2 (ESD)	Air Contact	±30KV ±30KV
IEC61000-4-4 (EFT) (5/50ns)		80A
Peak Pulse Power (8/20µs)	P _{PK}	1800W

Note :

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Circuit and Pin Schematic



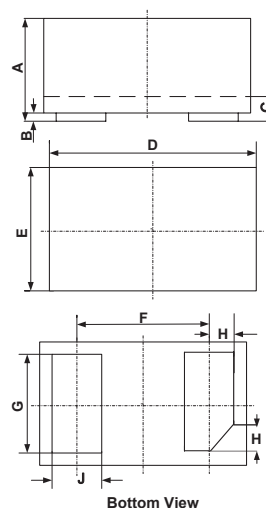
Top View

Marking Code



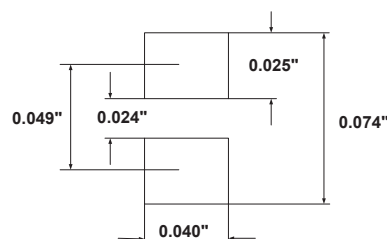
ESD Protection Device

DFN1610-2



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.018	0.022	0.45	0.55	
B	0.000	0.002	0.00	0.05	
C	0.004	0.008	0.10	0.20	
D	0.062	0.066	1.55	1.65	
E	0.038	0.042	0.95	1.05	
F	0.044		1.10		TYP.
G	0.030	0.034	0.75	0.85	
H	0.006	0.010	0.15	0.25	
J	0.014	0.018	0.35	0.45	

SUGGESTED SOLDER PAD LAYOUT



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

ESD0751P6

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	V_{RWM}				7	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	8		10	V
Reverse Leakage Current	I_R	$V_{RWM}=7V$			1	μA
Forward Voltage	V_F	$I_F=20mA$			1.25	V
Peak Pulse Current	I_{pp}	$t_p=8/20\mu s$			100	A
Clamping Voltage	V_C	$I_{pp}=100A, t_p=8/20\mu s$			17	V
Junction Capacitance	C_J	$V_R=0V, f=1MHz$		700	900	pF

ESD1051P6

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	V_{RWM}				10	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	10.7		12.3	V
Reverse Leakage Current	I_R	$V_{RWM}=10V$			1	μA
Forward Voltage	V_F	$I_F=20mA$			1.25	V
Peak Pulse Current	I_{pp}	$t_p=8/20\mu s$			86	A
Clamping Voltage	V_C	$I_{pp}=86A, t_p=8/20\mu s$			20	V
Junction Capacitance	C_J	$V_R=0V, f=1MHz$		545	650	pF

ESD1251P6

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	V_{RWM}				12	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	12.8		14.6	V
Reverse Leakage Current	I_R	$V_{RWM}=12V$			1	μA
Forward Voltage	V_F	$I_F=20mA$			1.25	V
Peak Pulse Current	I_{pp}	$t_p=8/20\mu s$			75	A
Clamping Voltage	V_C	$I_{pp}=75A, t_p=8/20\mu s$			22	V
Junction Capacitance	C_J	$V_R=0V, f=1MHz$		425	510	pF

Electrical Characteristics @ 25°C (Unless Otherwise Specified)
ESD1551P6

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	V_{RWM}				15	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	15.5		18	V
Reverse Leakage Current	I_R	$V_{RWM}=15V$			1	μA
Forward Voltage	V_F	$I_F=20mA$			1.25	V
Peak Pulse Current	I_{pp}	$t_p=8/20\mu s$			60	A
Clamping Voltage	V_C	$I_{pp}=60A, t_p=8/20\mu s$			30	V
Junction Capacitance	C_J	$V_R=0V, f=1MHz$		325	380	pF

ESD1851P6

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	V_{RWM}				18	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	19.2		22.5	V
Reverse Leakage Current	I_R	$V_{RWM}=18V$			1	μA
Forward Voltage	V_F	$I_F=20mA$			1.25	V
Peak Pulse Current	I_{pp}	$t_p=8/20\mu s$			50	A
Clamping Voltage	V_C	$I_{pp}=50A, t_p=8/20\mu s$			35	V
Junction Capacitance	C_J	$V_R=0V, f=1MHz$		280	310	pF

ESD2451P6

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	V_{RWM}				24	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	24.7		29	V
Reverse Leakage Current	I_R	$V_{RWM}=24V$			1	μA
Forward Voltage	V_F	$I_F=20mA$			1.25	V
Peak Pulse Current	I_{pp}	$t_p=8/20\mu s$			40	A
Clamping Voltage	V_C	$I_{pp}=40A, t_p=8/20\mu s$			43	V
Junction Capacitance	C_J	$V_R=0V, f=1MHz$		210	250	pF

Curve Characteristics

Fig. 1 - 8 X 20 μ s Pulse Waveform

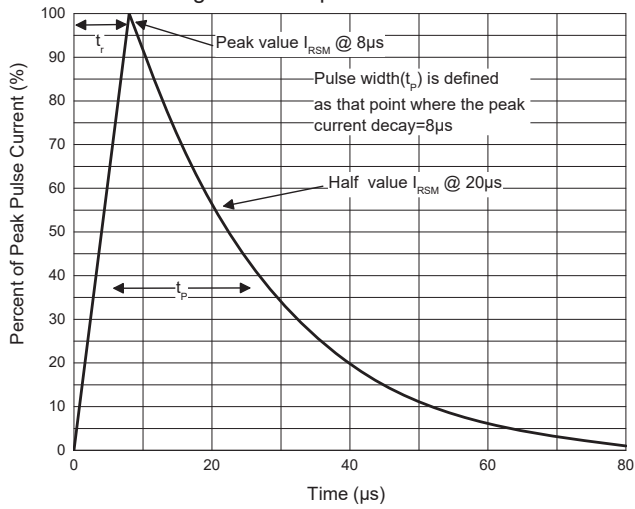


Fig. 2 - Non-Repetitive Peak Pulse Power

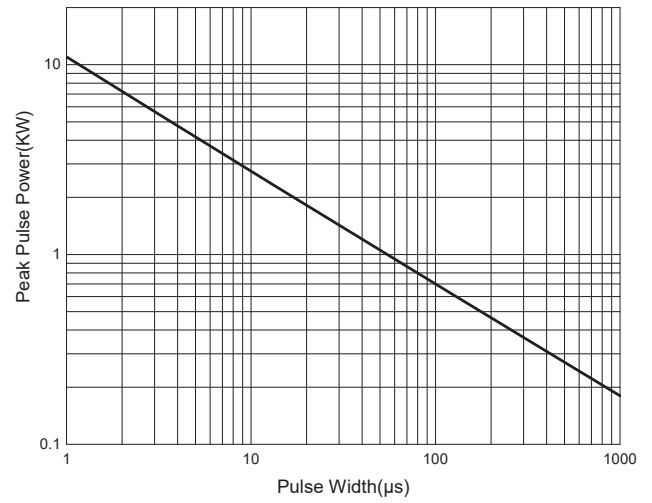


Fig. 3 - Clamping Voltage Characteristics

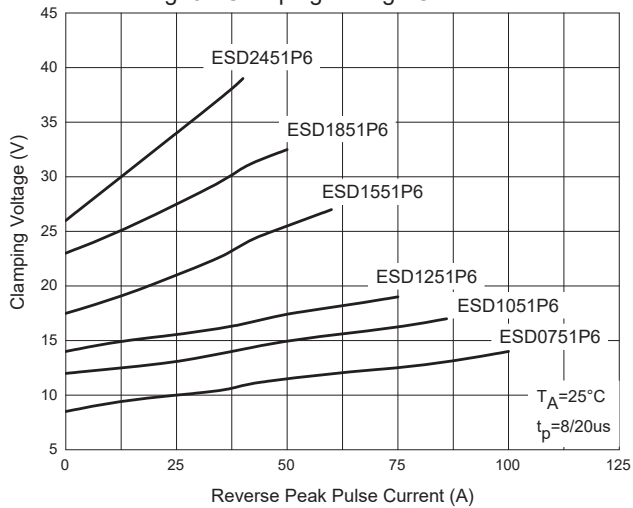
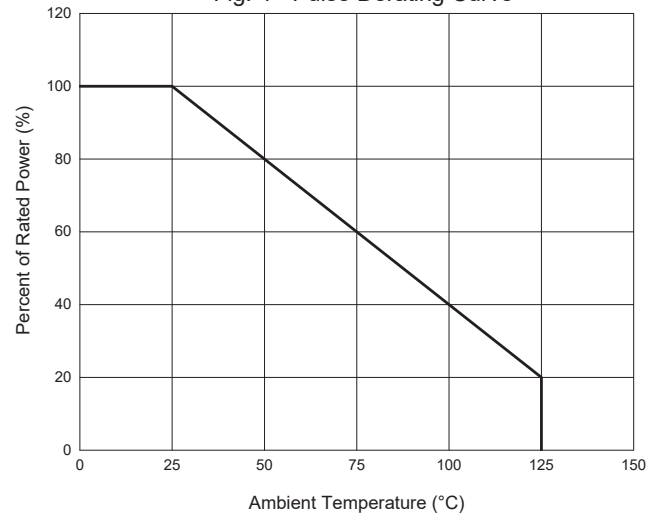


Fig. 4 - Pulse Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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