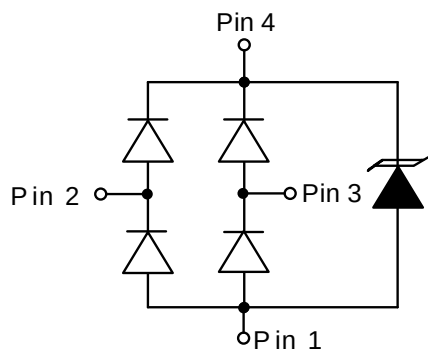


450W Surface Mount TVS For ESD Protection Device
FEATURES

- 450 Watts Peak Power per Line
($t_p = 8/20\mu s$)
- Protects two I/O lines
- Low operating voltage: 12V
- Low capacitance
- Solid-state technology

MECHANICAL DATA

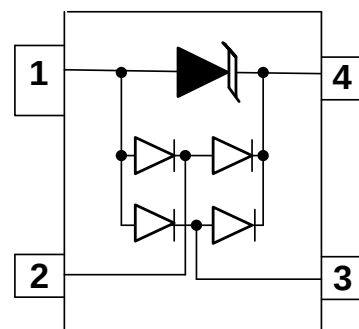
- Case : Molded, plastic SOT-143
- Polarity : Shown follows
- Epoxy : UL94-V0 rated flame retardant

SOT-143 PACKAGE

APPLICATIONS

- ADSL
- Industrial Electronics
- Portable Electronics
- LAN/WAN equipment
- Microcontroller Input Protection

IEC COMPATIBILITY

- IEC 61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 12.5A (8/20 μs)

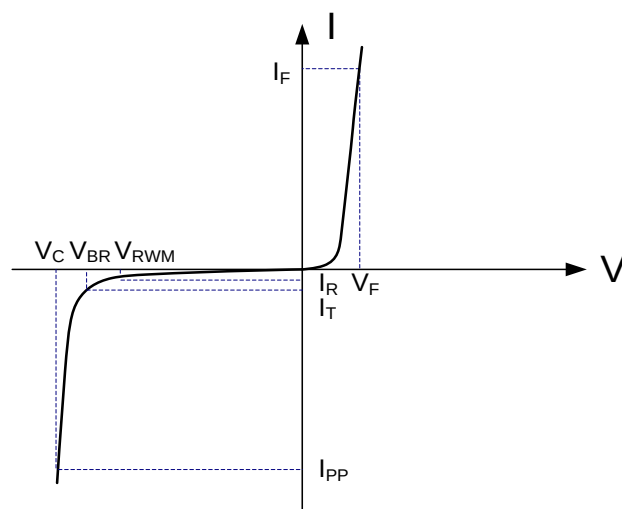
SCHEMATIC & PIN CONFIGURATION


450W Surface Mount TVS For ESD Protection Device

Absolute Maximum Rating			
Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{PP}	450	Watts
Peak Pulse Current ($t_p=8/20\mu s$)	I_{PP}	12.5	A
Operating Temperature	T_J	-55 to + 125	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Electrical Parameters (T=25°C)

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Reverse Stand-Off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F


Electrical Characteristics

DCS12143W						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				12	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	13.3			V
Reverse Leakage Current	I_R	$V_{RWM}=12V, T=25^\circ C$			1.0	μA
Clamping Voltage	V_C	$I_{PP}=12.5A, t_p=8/20\mu s$			32	V
Dynamic Resistance ^{1,2}	R_{DYN}	$TLP=0.2/100ns$		0.4		Ω
ESD Clamping Voltage ¹	V_C	$I_{PP} = 4A,$ $t_p = 0.2/100ns$ (TLP)		18.5		V
ESD Clamping Voltage ¹	V_C	$I_{PP} = 16A,$ $t_p = 0.2/100ns$ (TLP)		23.5		V
Junction Capacitance	C_j	Between I/O pins and Ground $V_R=0V, f=1MHz$		5	10	pF
		Between I/O pins $V_R=0V, f=1MHz$		3	5	pF

Notes : 1、TLP Setting : $t_p=100ns, t_r=0.2ns, I_{TLP}$ and V_{TLP} sample window: $t_1=70ns$ to $t_2=90ns$.

2、Dynamic resistance calculated from $I_{PP}=4A$ to $I_{PP}=16A$ using "Best Fit".

Typical Characteristics

Figure 1: Peak Pulse Power Vs Pulse Time

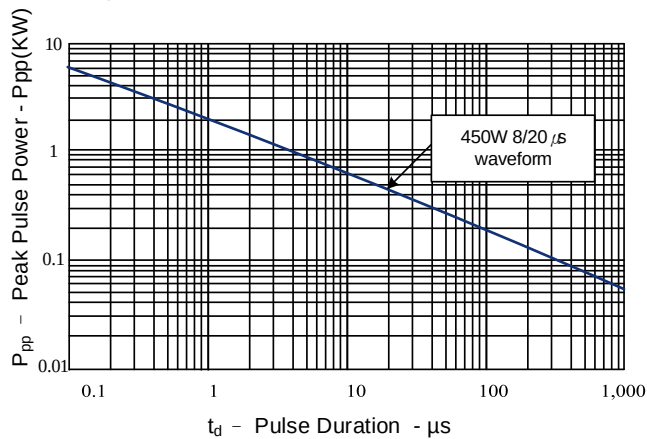


Figure 2: Power Derating Curve

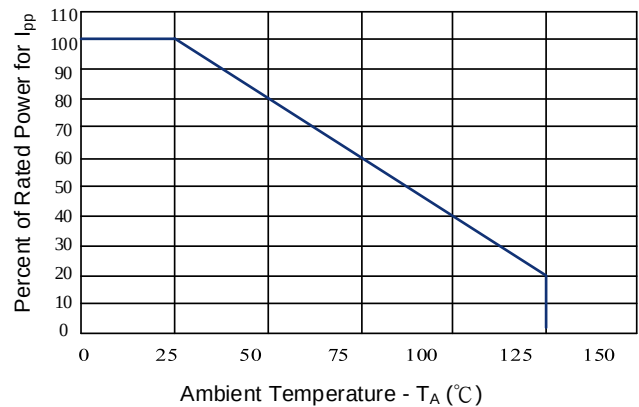


Figure 3: Clamping Voltage vs. Peak Pulse Current

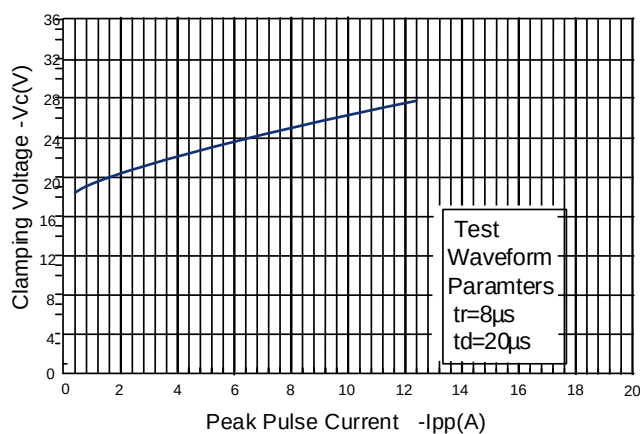


Figure 4: Capacitance vs. Reverse Voltage

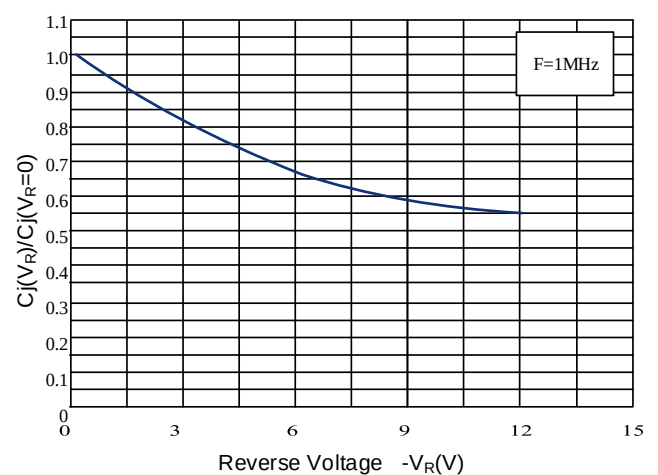


Figure 5: 8/20μs Pulse Waveform

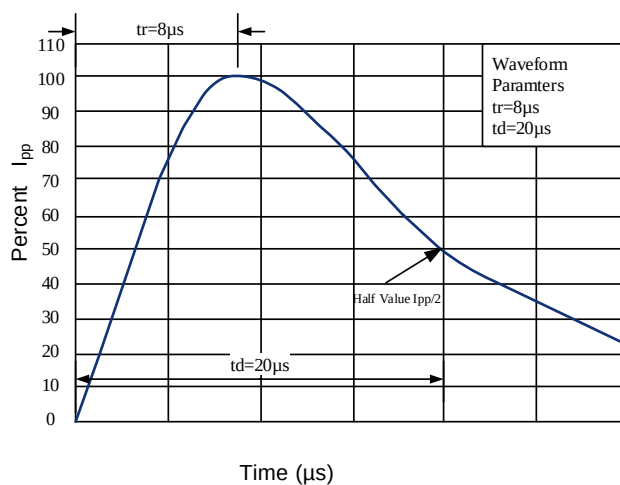
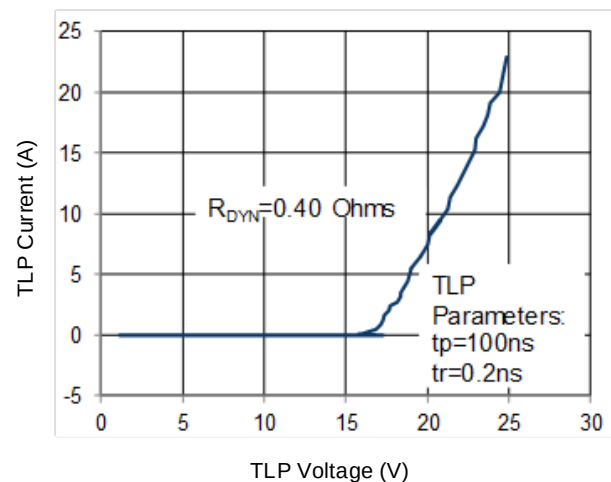


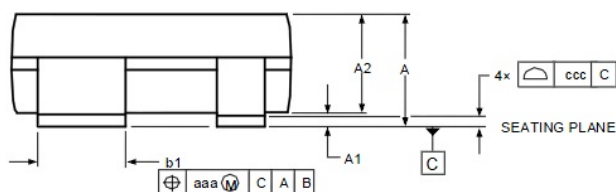
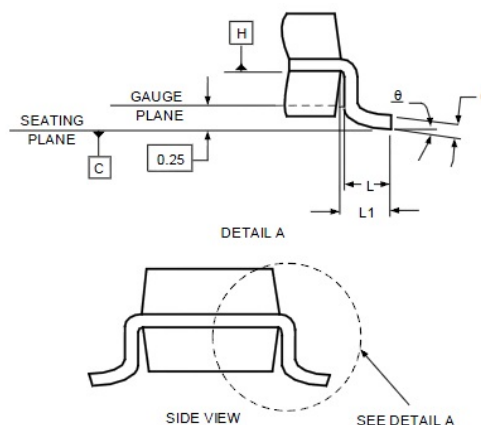
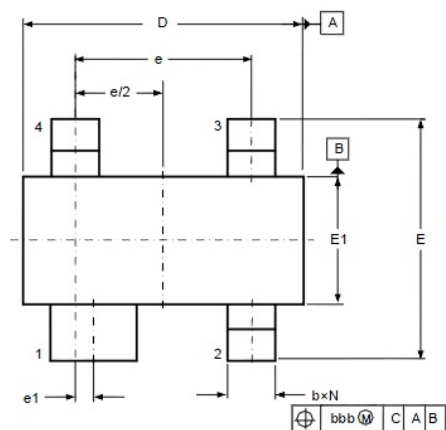
Figure 6: TLP I-V Curve





Outline Drawing

SOT-143



DIMENSIONS				
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
b1	0.750	0.900	0.030	0.035
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
e	1.800	2.000	0.071	0.079
e1	0.200TYP		0.008TYP	
E	2.250	2.550	0.089	0.100
E1	1.200	1.400	0.047	0.055
L1	0.550REF		0.022REF	
L	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Notes

1. This land pattern is for reference purposes only consult your manufacturing group to ensure your company's manufacturing guidelines are met.
2. Reference IPC-SM-782A.

Rev.B

Ordering Information:

Device PN	Packing
SESDR12VW -T ⁽¹⁾ H ⁽²⁾ -WS	Tape&Reel: 3 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) Halogen free product for packing code suffix "H"

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