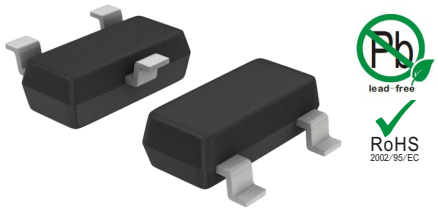
High Capacitance Series
ESD Protection

PTT233H50M7BA40

Features

- 400 Watts peak pulse power (tp = 8/20μs)
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance (Cj=50 pF typ.)



SOT-23

IEC COMPATIBILITY (EN61000-4)

- **IEC 61000-4-2 ±30kV contact ±30kV air**
- **IEC 61000-4-4 (EFT) 40A (5/50ns)**
- **IEC 61000-4-5 (Lightning) 16A (8/20μs)**

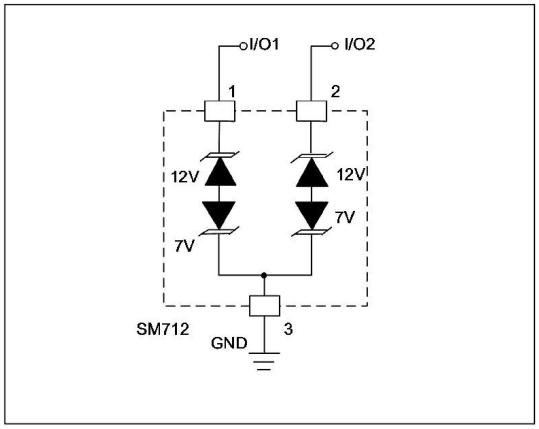
Applications

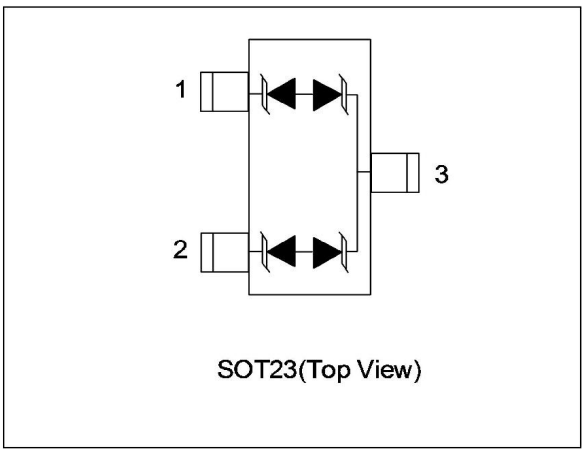
- Dataline
- Automatic Teller Machines
- Net works
- Power line

Mechanical Characteristics

- SOT-23 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

Schematic & PIN Configuration





PTT233H50M7BA40

Absolute Maximum Rating

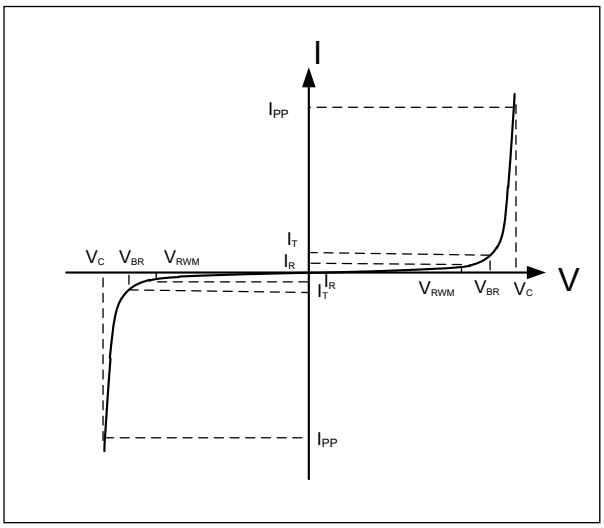
Rating	Symbol	Value	Units
Peak Pulse Power (t_p =8/20μs)	P_{PP}	400	Watts
Peak Pulse Current (t_p =8/20μs) (note1)	I_{pp}	16	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	30 30	kV
Lead Soldering Temperature	T_L	260(10seconds)	℃
Junction Temperature	T_J	-55 to + 125	℃
Storage Temperature	T_{stg}	-55 to + 125	℃

Electrical Characteristics

			Pins 1 to 3 and 2 to 3 (12V TVS)			Pins 3 to 1 and 3 to 2 (7V TVS)			
Parameter	**Symbol**	**Conditions**	**Min**	**Typical**	**Max**	**Min**	**Typical**	**Max**	**Units**
Reverse Stand-Off Voltage	V_{RWM}				12			7	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	13.3			8.0			V
Reverse Leakage Current	I_R	VR=V_{RWM}			1			1	μA
Clamping Voltage	V_C	I_{PP}=16A,tp=8/20μs			25				V
		I_{PP}=28A,tp=8/20μs						17	
Junction Capacitance	C_j	VR = 0V, f = 1MHz		50	60		50	60	pF

Electrical Parameters (TA = 25°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



Note:. 8/20μs pulse waveform.

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

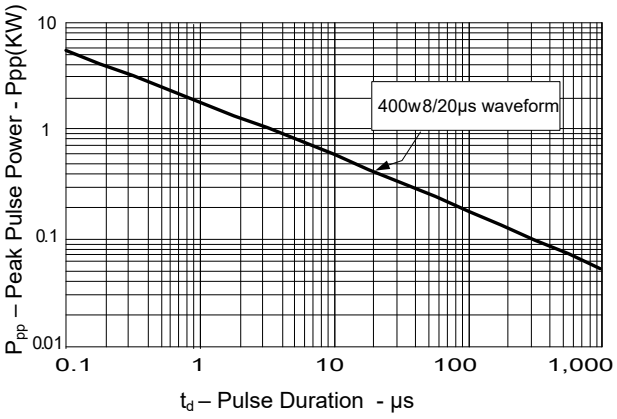


Figure 2: Power Derating Curve

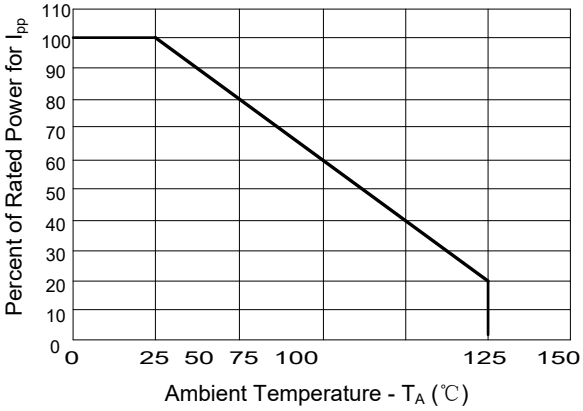


Figure3: Pulse Waveform

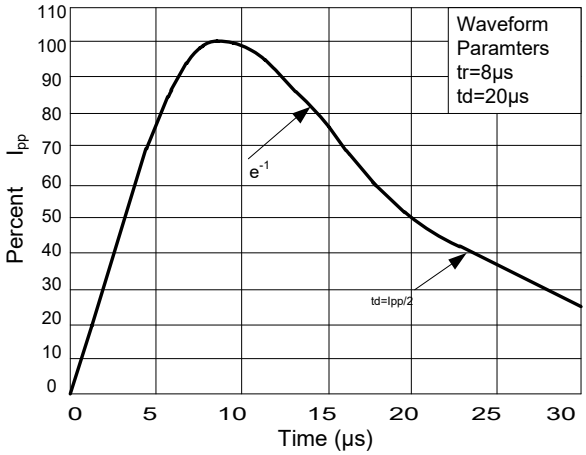
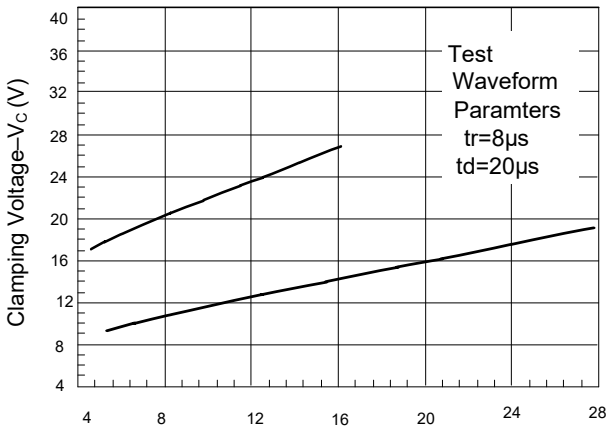
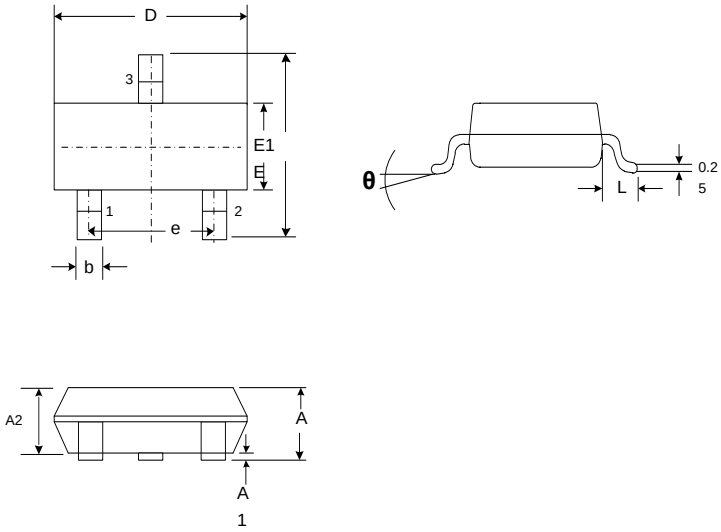


Figure 4: Clamping Voltage vs.Ipp

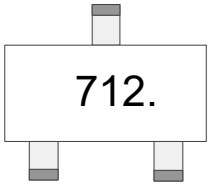


Outline Drawing – SOT-23



DIMENSIONS				
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.890	1.120	0.035	0.044
A1	0.001	0.100	0.0006	0.0043
A2	0.880	1.020	0.035	0.040
D	2.800	3.040	0.110	0.120
E	2.100	2.640	0.082	0.104
E1	1.200	1.400	0.047	0.055
e	1.900 BSC		0.750 BSC	
L	0.400	0.600	0.015	0.024
θ	0	8°	0	8°

Marking



Ordering information

Order code	Package	Base qty	Delivery mode
PTT233H50M7BA40	SOT-23	3k	Tape and reel