



# SE712Q7BDI

## ESD PROTECTION DIODE

### FEATURES

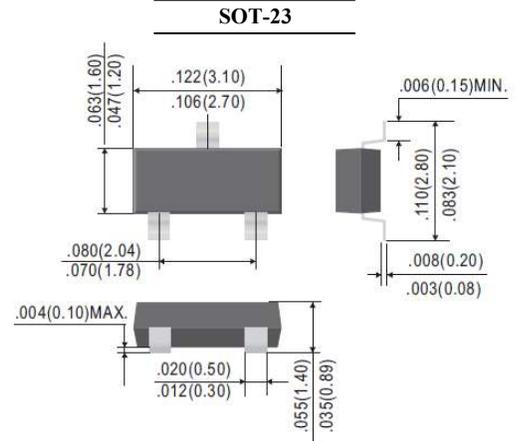
- IEC61000-4-2(ESD) 15kV(air), 8kV(Contact)
- ESD protects two +12V to -7V lines
- Low Clamping Voltage
- Low leakage current
- ESD protection of two lines
- Suffix " H " indicated Halogen-free part, ex.SE712Q7BDIH

### APPLICATIONS

- Data lines
- Industrial Controls
- Computers and peripherals
- Protection of RS-485 transceivers with extended common-mode range
- Security systems
- Automatic Teller Machines

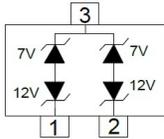
### MECHANICAL DATA

Case : SOT-23



**Dimensions in inchs and (millimeters)**

### PIN CONFIGURATION



### Maximum Ratings (Rating at 25°C ambient temperature unless otherwise specified)

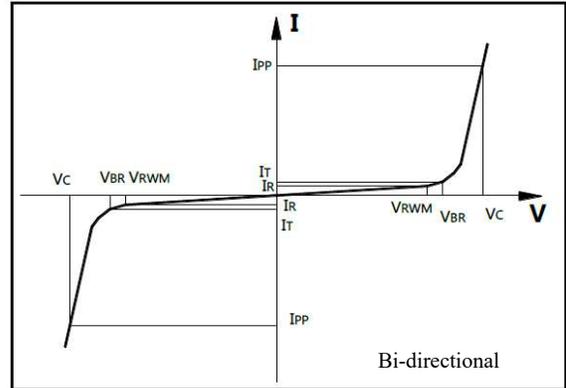
Parameter	Symbol	Value	Units
Peak Pulse Power ( $t_p=8/20\mu s$ )	$P_{PP}$	264	W
Peak Pulse Current ( $t_p=8/20\mu s$ )	$I_{PP}$	13	A
ESD per IEC 61000-4-2 (Air)	$V_{ESD}$	15	kV
ESD per IEC 61000-4-2 (Contact)		8	
Operating Temperature Range	$T_j$	-55 to +125	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C



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Symbol	Parameter
$V_{RWM}$	Nominal Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Reverse Breakdown Voltage @ $I_T$
$I_T$	Test Current for Reverse Breakdown
$V_C$	Clamping Voltage @ $I_{pp}$
$I_{pp}$	Maximum Peak Pulse Current
$V_R$	Reverse Voltage
$C_j$	Capacitance



### Electrical Characteristics ( $T_{amb}=25^{\circ}C$ Unless Otherwise Specified)

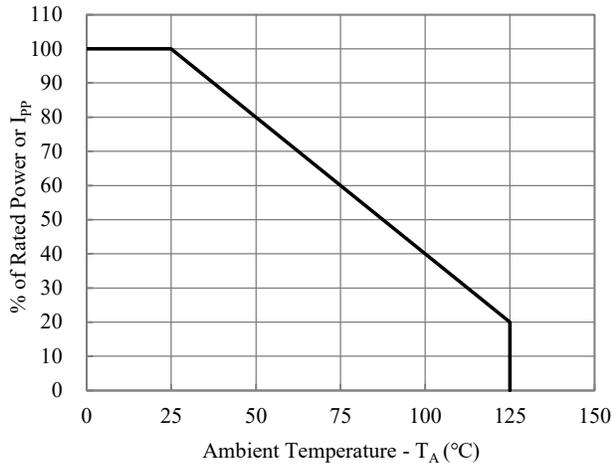
Parameter	Conditions	Symbol	Pin 1 to 3 and 2 to 3 (12V TVS)			Pin 3 to 1 and 3 to 2 (7V TVS)			Units
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Reverse Working Voltage	-	$V_{RWM}$	-	-	12.0	-	-	7.0	V
Reverse Breakdown Voltage	$I_T=1mA$	$V_{BR}$	13.3	-	-	7.5	-	-	V
Reverse Leakage Current	$V_R=V_{RWM}$	$I_R$	-	-	1.0	-	-	20	$\mu A$
Clamping Voltage	$I_{pp}=5A, t_p=8/20\mu s$	$V_C$	-	-	20	-	-	10	V
	$I_{pp}=12A, t_p=8/20\mu s$		-	-	22	-	-	12	
Junction Capacitance	$V_R=0V, f=1MHz,$	$C_j$	-	-	75	-	-	75	pF



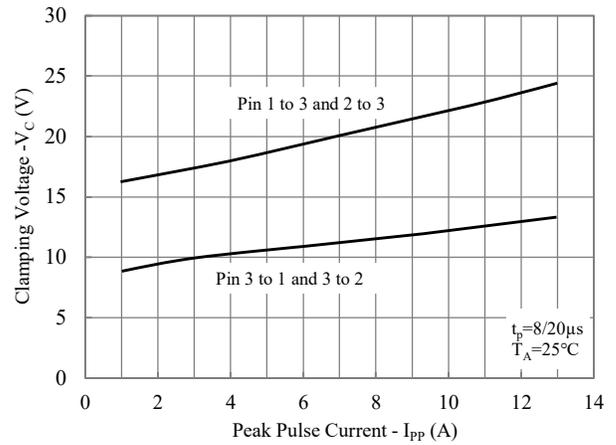
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## ESD PROTECTION DIODE

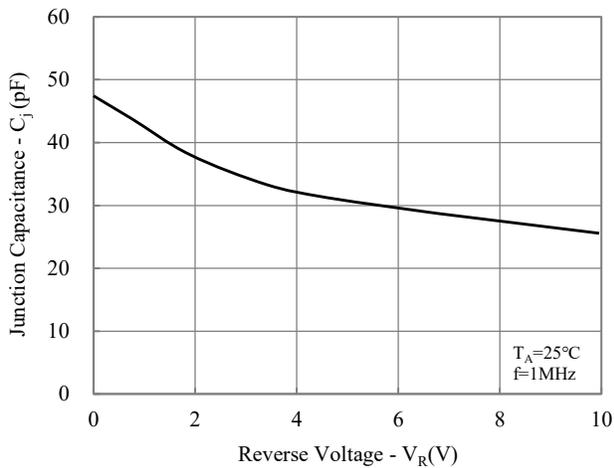
### RATINGS AND CHARACTERISTIC CURVES



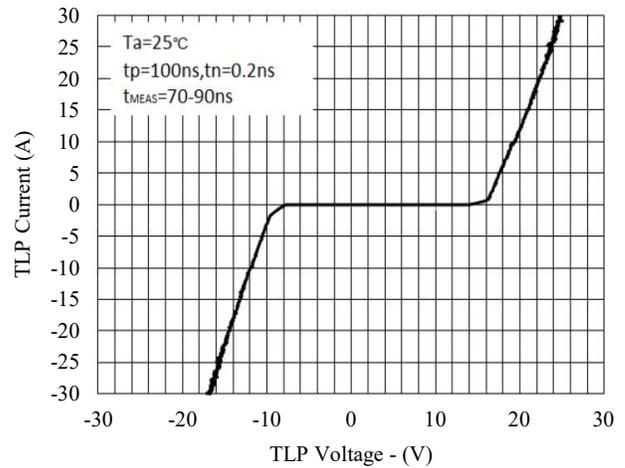
**Fig.1-Power Derating Curve**



**Fig.2-Clamping Voltage vs. Peak Pulse Current**



**Fig.3-Junction Capacitance**



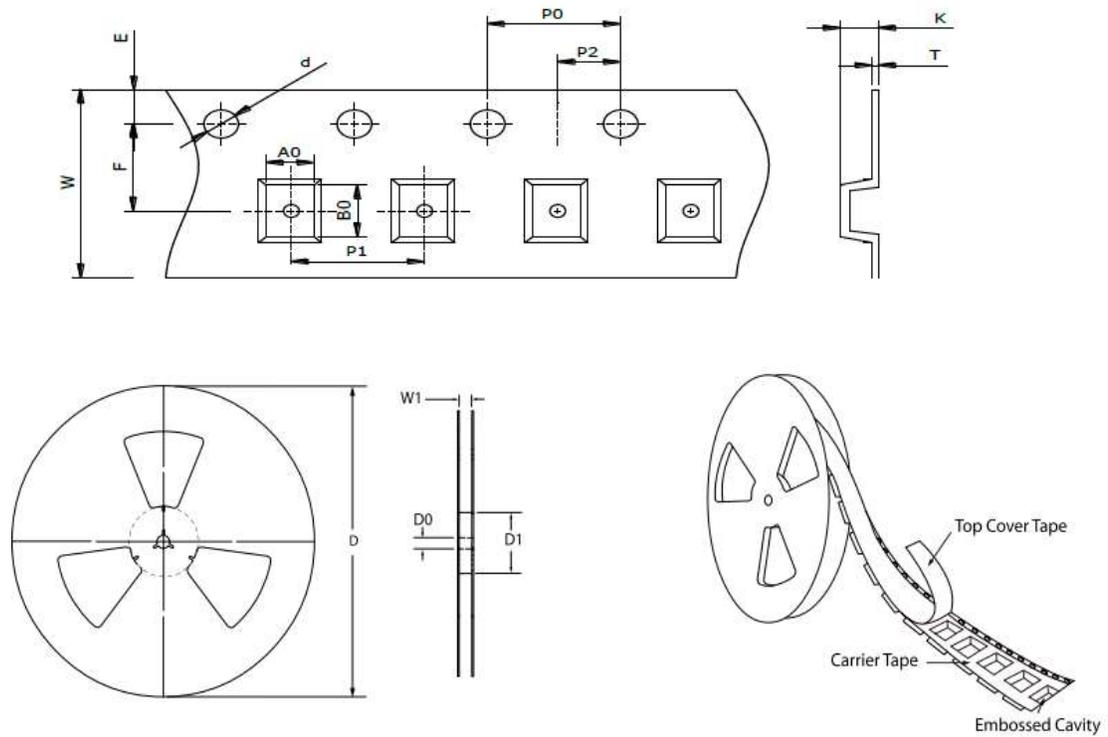
**Fig.4-TLP Curve**



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### TAPE & REEL SPECIFICATION



Item	Symbol	SOT-23
Carrier width	A <sub>0</sub>	3.10 ± 0.10
Carrier length	B <sub>0</sub>	2.70 ± 0.10
Carrier depth	K	1.15 ± 0.10
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	178.00 ± 2.00
Feed hole width	D <sub>0</sub>	13.00 ± 0.20
Reel inner diameter	D <sub>1</sub>	MIN. 54.00
Sprocket hole position	E	1.75 ± 0.10
Punch hole position	F	3.50 ± 0.10
Sprocket hole pitch	P <sub>0</sub>	4.00 ± 0.10
Punch hole pitch	P <sub>1</sub>	4.00 ± 0.10
Embossment center	P <sub>2</sub>	2.00 ± 0.10
Overall tape thickness	T	0.20 ± 0.05
Tape width	W	8.00 ± 0.20
Reel width	W <sub>1</sub>	MAX. 13.50

### ORDER INFORMATION

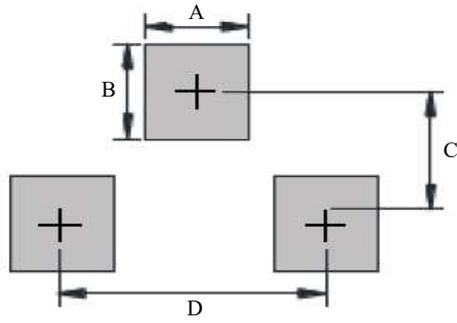
Package	Marking Code	Reel Size	Quantity
SOT-23	712	7"	3,000



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### SUGGESTED SOLDER PAD LAYOUT



Unit : mm

PACKAGE	A	B	C	D
SOT-23	0.80	0.80	2.02	1.90