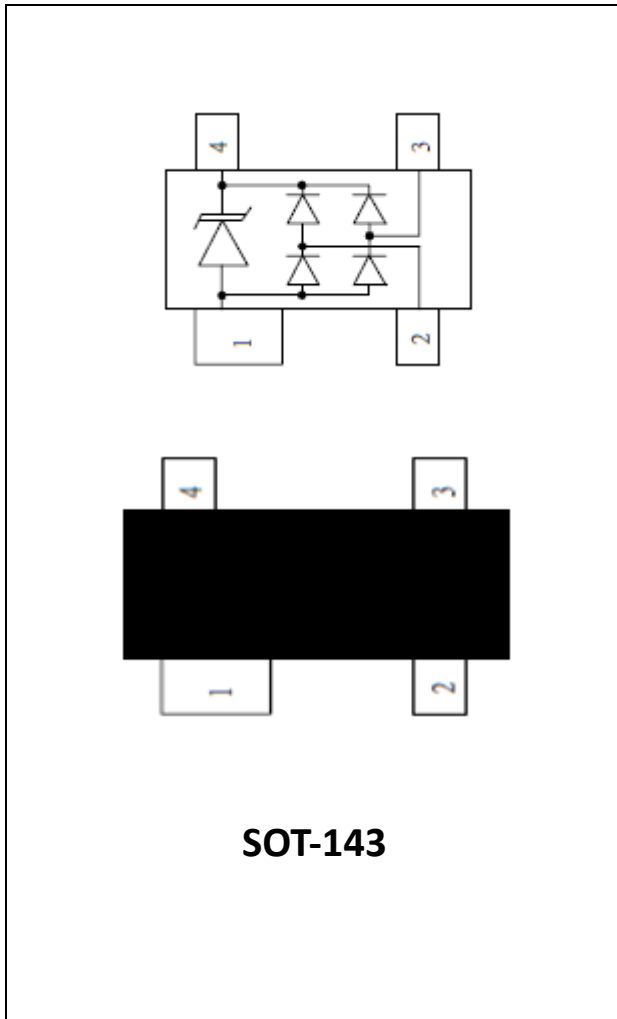


1- Line, Uni-directional, Transient Voltage Suppressor



SOT-143

Features

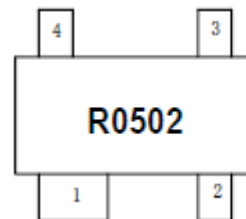
- Stand-off voltage: 5V Max
- Transient protection for each line according to
IEC61000-4-2(ESD): $\pm 20\text{kV}$ (contact)
IEC61000-4-5(surge): 5A (8/20 μs)
- Low leakage current
- Ultra-low capacitance: $C_J = 0.3\text{pF}$ typ
- Low clamping voltage
- RoHS Compliant

Applications

- Cellular Handsets and Accessories
- Notebooks and Handhelds
- Personal Digital Assistants
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players, Keypads, Side Keys, LCD
- USB 2.0

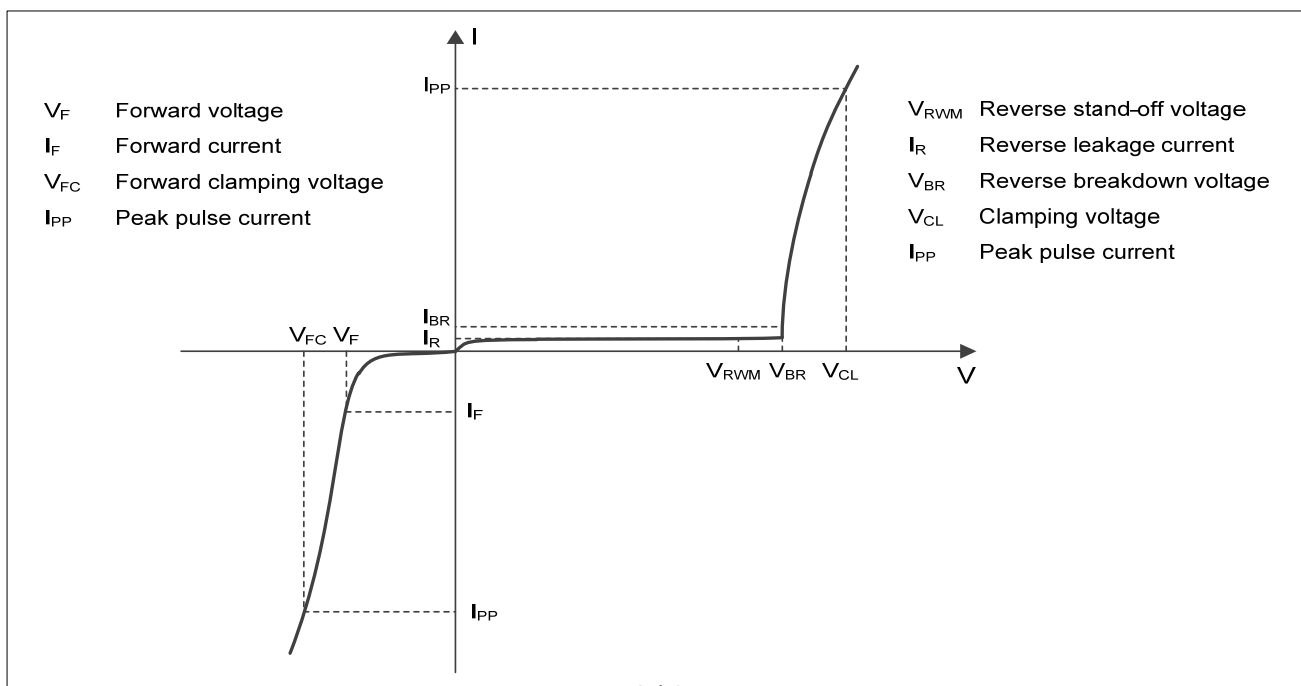
Mechanical Data

- Package: SOT-143
- Case Material: "Green" Molding Compound
- Marking Information: See Below



R0502 = Device Marking Code
Pin1 is ground

■Definitions of electrical characteristics





ESDSL0502S1

Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	75	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	5	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 25	KV
ESD according to IEC61000-4-2 contact discharge		± 20	
Junction temperature	T_J	-55~125	$^{\circ}C$
Storage temperature	T_{STG}	-55~150	$^{\circ}C$

Electrical Characteristics ($T_a=25^{\circ}C$ Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				5
Reverse leakage current	I_R	μA	$V_{RWM} = 5V$,			0.5
Reverse breakdown voltage	$V_{(BR)}$	V	$I_T = 1mA$,	6		
Clamping voltage	V_{CL}	V	$I_{PP} = 1A$, $t_p = 8/20\mu s$			10
		V	$I_{PP} = 5A$, $t_p = 8/20\mu s$			15
Junction capacitance	C_J	pF	$V_R = 0V$, $f = 1MHz$, between I/O pins		0.3	0.4
		pF	$V_R = 0V$, $f = 1MHz$, any I/O pin to ground			0.8

Notes:

- (1). TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, $t_r = 2ns$, averaging window from 60ns to 80ns. RDYN is calculated from 4A to 16A.
- (2). Contact discharge mode, according to IEC61000-4-2.
- (3). Non-repetitive current pulse, according to IEC61000-4-5

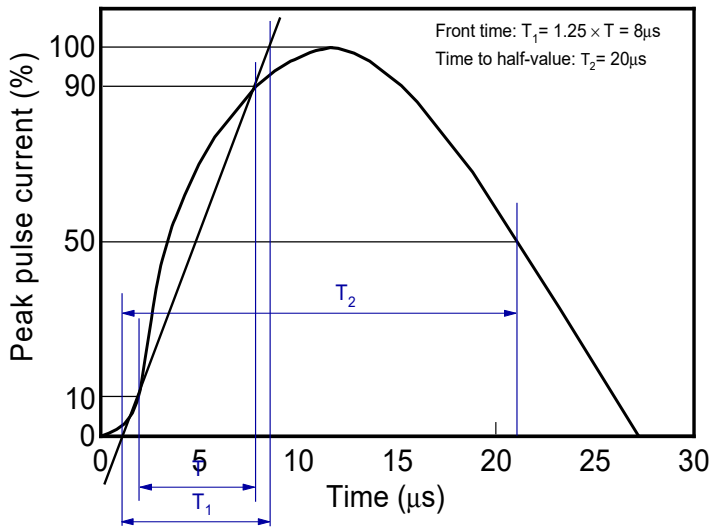
Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESDSL0502S1	F1	Approximate 0.9	3000	30000	120000	7 reel

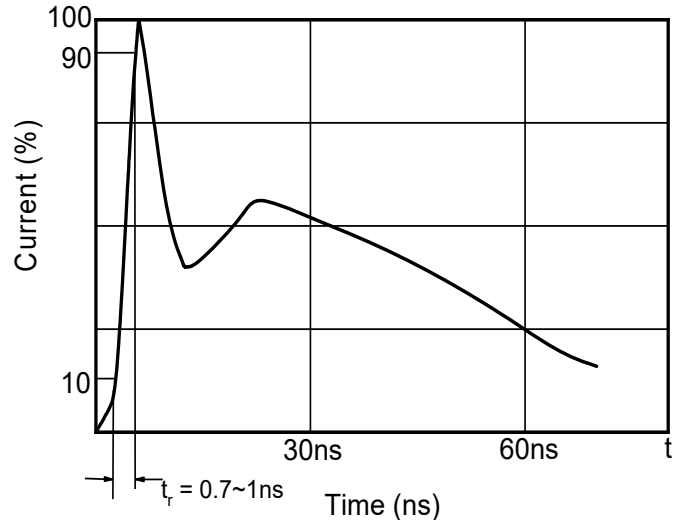


■ Characteristics (Typical)

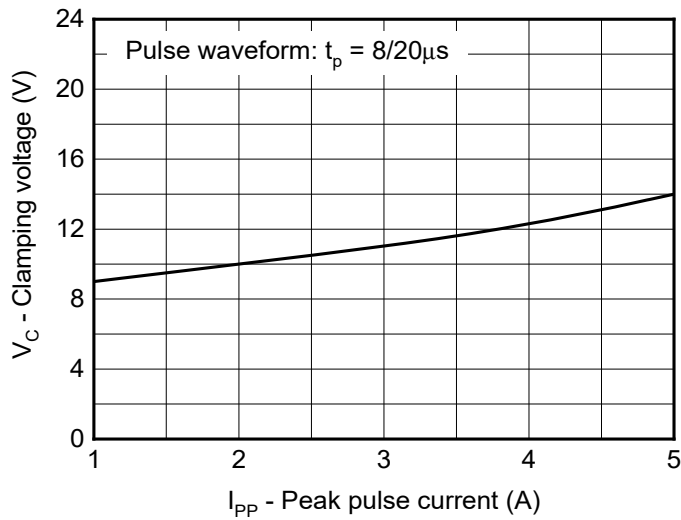
8/20 μ s waveform per IEC61000-4-5



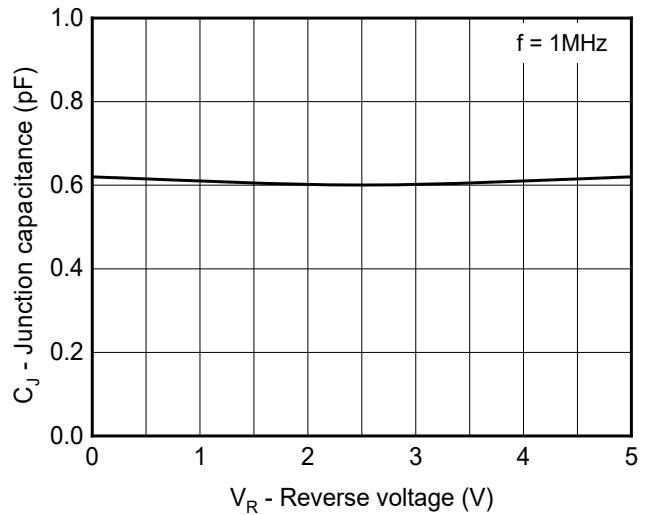
Contact discharge current waveform per IEC61000-4-2



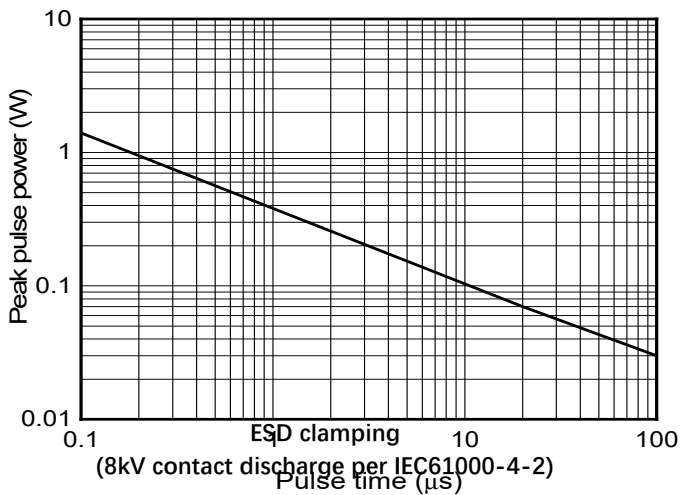
Clamping voltage vs. Peak pulse current



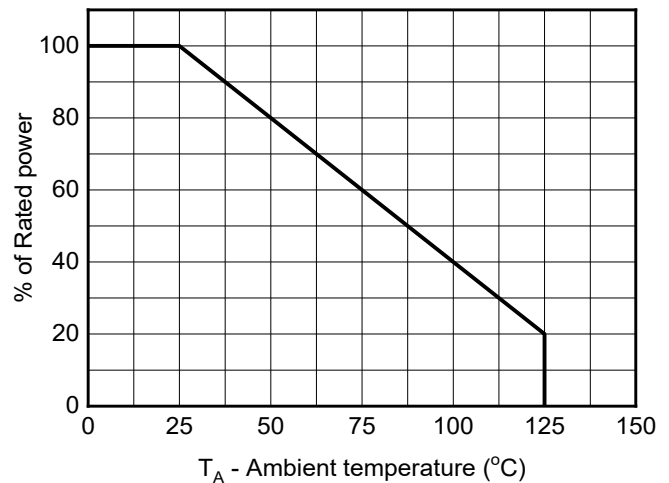
Capacitance vs. Reverse voltage

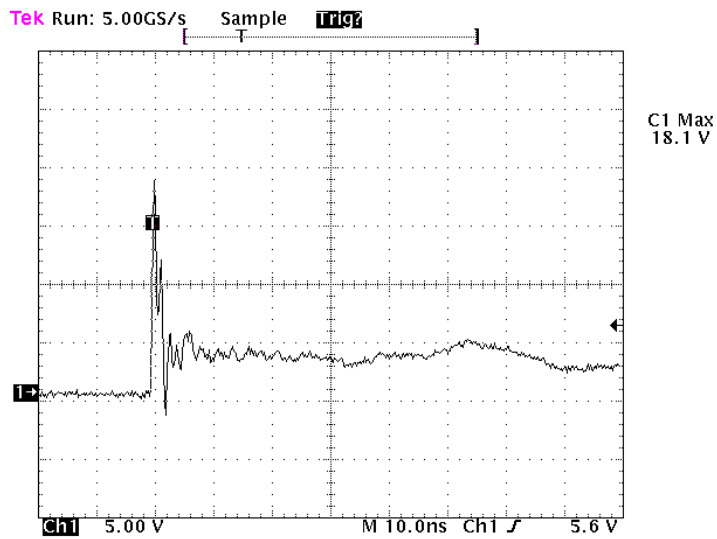


Non-repetitive peak pulse power vs. Pulse time



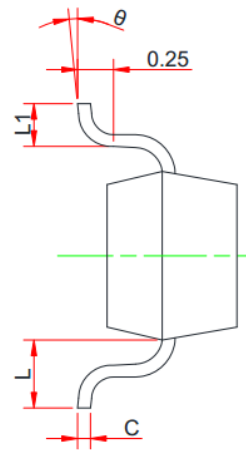
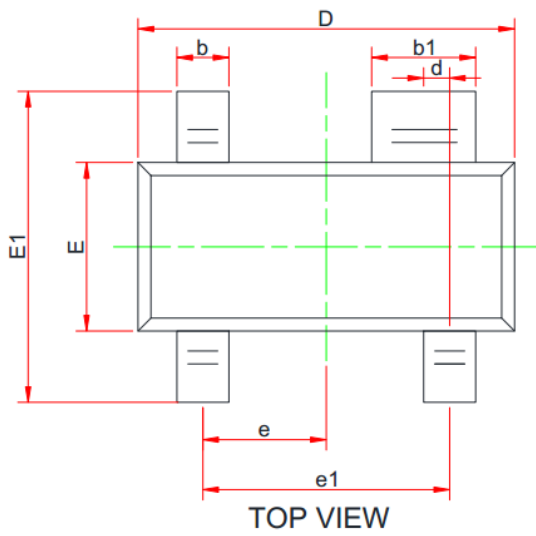
Power derating vs. Ambient temperature



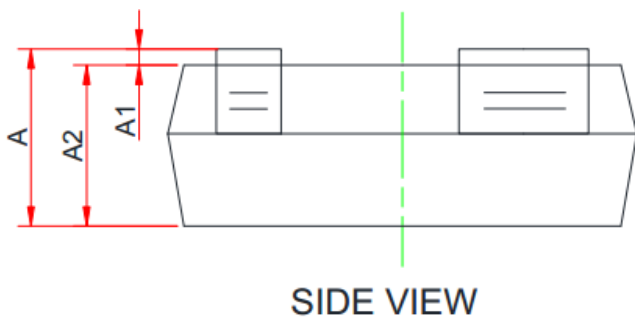




■ Outline Dimensions



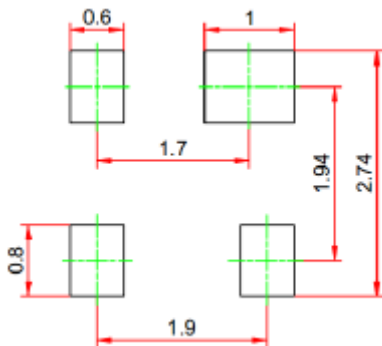
SIDE VIEW



SIDE VIEW

SYS YM	MILLIMETERS		
	MIN	NOM	MAX
A	0.90	-	1.15
A1	0.00	0.05	0.10
A2	0.90	-	1.05
b	0.30	0.40	0.50
b1	0.75	-	0.90
c	0.08	-	0.15
D	2.80	2.90	3.00
d	0.20 Typ		
E	1.20	1.30	1.40
E1	2.25	2.40	2.55
e	0.95 Typ		
e1	1.80	1.90	2.00
L	0.55 Ref		
L1	0.30	0.40	0.50
θ	0°	-	8°

■ Soldering Footprint



Unit (mm)

Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met



Disclaimer

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