



FEATURES:

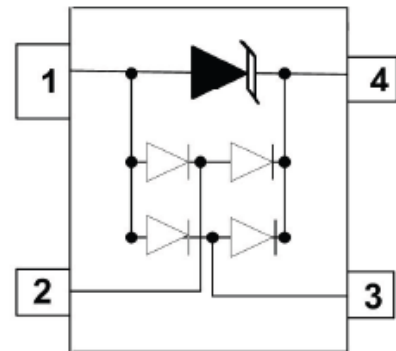
- ◇ 60 Watts peak pulse power per line ($t_P=8/20\mu s$)
- ◇ Protects two I/O lines
- ◇ Low clamping voltage
- ◇ Low operating voltage
- ◇ Low capacitance
- ◇ RoHS compliant



SOT-143

MAIN APPLICATIONS

- ◇ Fire wire & USB
- ◇ Sensitive analog inputs
- ◇ Notebook computers
- ◇ Portable electronics
- ◇ LAN/WAN equipment
- ◇ Video line protection
- ◇ Microcontroller input protection



PIN Configuration

PROTECTION SOLUTION TO MEET

- ◇ IEC61000-4-2 (ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact)
- ◇ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◇ IEC61000-4-5 (Lightning) 5A (8/20 μs)

MECHANICAL CHARACTERISTICS

- ◇ JEDEC SOT-143 package
- ◇ Molding compound flammability rating: UL 94V-0
- ◇ Quantity per reel: 3, 000pcs
- ◇ Lead finish: lead free
- ◇ Marking code: E5R

ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20 μs waveform	P_{PP}	60	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/-15 +/- 8	kV
Lead soldering temperature	T_L	260 (10 sec.)	$^{\circ}\text{C}$
Operating junction temperature range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V_{RWM}				5.0	V
Reverse breakdown voltage	V_{BR}	$I_T = 1\text{mA}$	6.0			V
Reverse leakage current	I_R	$V_{RWM} = 5\text{V}$ pin4 to pin1			1	μA
Clamping voltage (I/O pin to Ground)	V_C	$I_{PP} = 1\text{A}$, $t_p=8/20\mu\text{s}$		9.5	10.5	V
		$I_{PP} = 5\text{A}$, $t_p=8/20\mu\text{s}$		13	15	V
Junction capacitance	C_J	$V_{RWM} = 0\text{V}$, $f = 1\text{MHz}$ Any I/O pin to Ground		0.8	1.0	pF
		$V_{RWM} = 0\text{V}$, $f = 1\text{MHz}$ Between I/O pins		0.4	0.6	

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

FIG.1: V- I curve characteristics (Uni-directional)

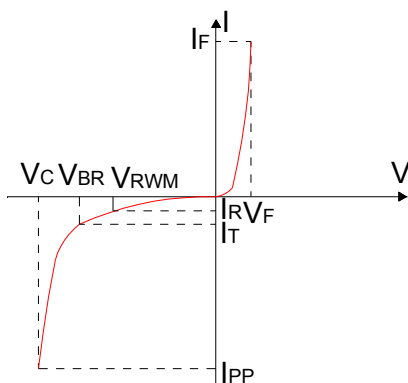


FIG.2: Pulse waveform (8/20 μs)

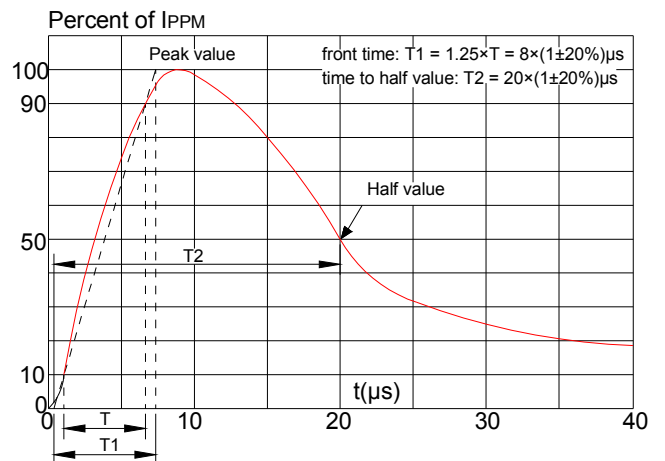


FIG.3: Pulse derating curve

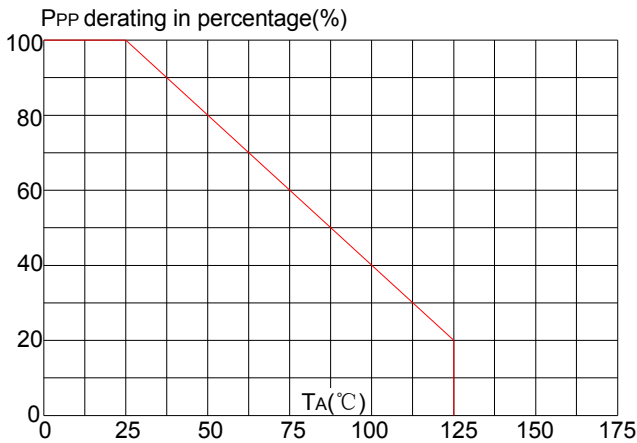
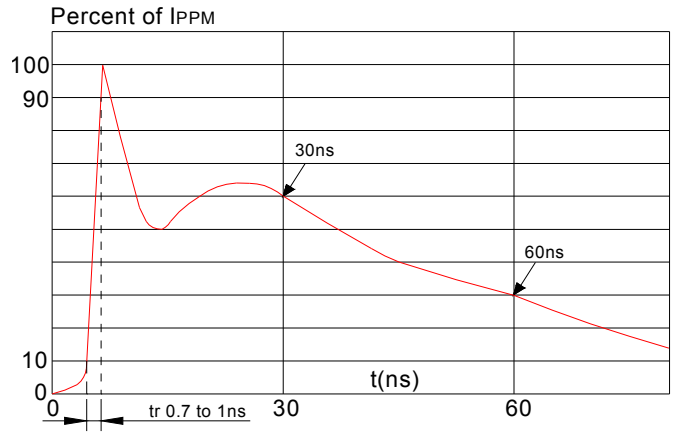
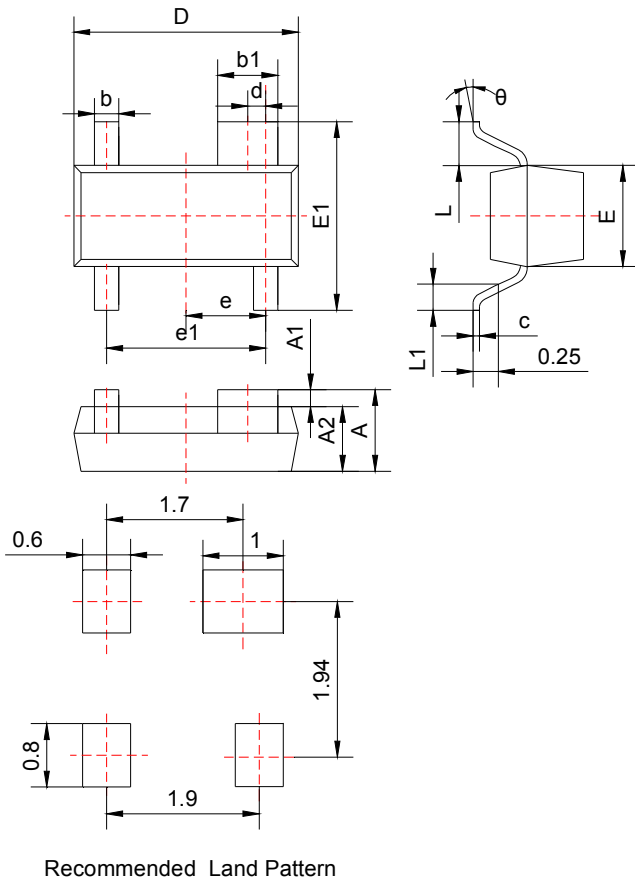


FIG.4: ESD clamping (8KV contact)

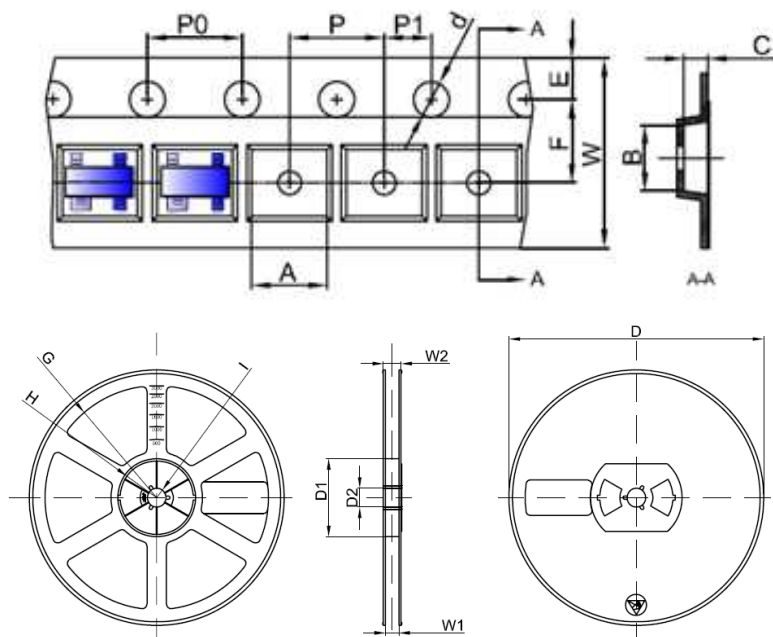


PACKAGE MECHANICAL DATA



Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	0.00	0.10	0.000	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
b1	0.75	0.90	0.030	0.035
c	0.08	0.15	0.003	0.006
D	2.80	3.00	0.110	0.118
d	0.20Typ.		0.008Typ.	
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.95Typ.		0.037Typ.	
e1	1.80	2.00	0.071	0.079
L	0.55Typ.		0.022Typ.	
L1	0.30	0.50	0.012	0.020
θ	0°	8°	0°	8°

TAPE AND REEL SPECIFICATION-SOT-143



Symbol	Millimeters	Inches
A	3.19±0.1	0.126±0.004
B	2.80±0.1	0.110±0.004
C	1.31±0.1	0.052±0.004
d	Φ1.50±0.1	Φ0.059±0.004
E	1.75±0.1	0.069±0.004
F	3.50±0.1	0.138±0.004
P0	4.00±0.1	0.157±0.004
P	4.00±0.1	0.157±0.004
P1	2.00±0.1	0.079±0.004
W	8.00±0.1	0.315±0.004
D	Φ178±2	7.008±0.079
D1	54.40±1	2.142±0.039
D2	13.00±1	0.512±0.039
G	R78.00±1	3.071±0.039
H	R25.60±1	1.008±0.039
I	R6.50±1	0.256±0.039
W1	9.50±1	0.374±0.039
W2	12.30±1	0.484±0.039

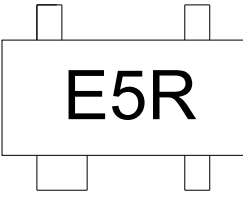
Packaging description:

SOT-143 parts are shipped in tape. The carrier tape is made from a dissipative(carbon filled) polycarbonate resin. The cover tape is a multilayer film(heat activated adhesive in nature)primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and made of polystyrene plastic(anti-static coated).

ORDERING INFORMATION

OUTLINE	PACKAGE TYPE	QUANTITY REEL	DESCRIPTION
TAPING	SOT-143	3,000	7 inch reel pack

MARKING CODE

Part Number	Marking Code
JEU05UCR	

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