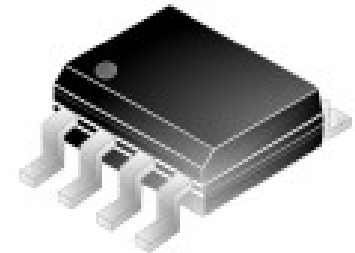




### FEATURES

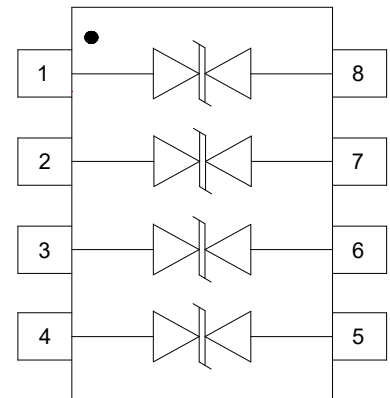
- ◇ 300 Watts peak pulse power per line ( $t_P=8/20\mu s$ )
- ◇ Bi-directional protection
- ◇ Protects four I/O lines
- ◇ Low leakage current
- ◇ Low operating and clamping voltage
- ◇ Solid-state silicon avalanche technology
- ◇ RoHS compliant



SOP-8

### MAIN APPLICATIONS

- ◇ WAN/LAN equipment
- ◇ Desktops, servers, notebooks & handhelds
- ◇ Instrumentation
- ◇ Microprocessor based equipment
- ◇ Data and I/O lines
- ◇ Serial and parallel ports



Pin Configuration(Top view)

### 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) 12A (8/20 $\mu s$ )

### MECHANICAL CHARACTERISTICS

- ◇ JEDEC SOP-8 package
- ◇ Molding compound flammability rating : UL 94V-0
- ◇ Quantity per reel : 4,000pcs
- ◇ Lead finish :lead free
- ◇ Marking code :B SM15C

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

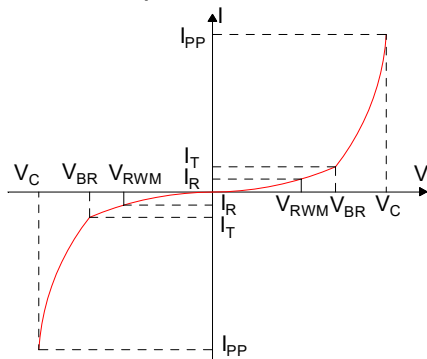
Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 8/20 $\mu\text{s}$ waveform	$P_{PP}$	300	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	+/-15 +/-8	kV
Lead soldering temperature	$T_L$	260 (10 sec.)	$^{\circ}\text{C}$
Operating junction temperature range	$T_J$	-55 to +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	$V_{RWM}$				15	V
Reverse breakdown voltage	$V_{BR}$	$I_T=1\text{mA}$	16.5			V
Reverse leakage current	$I_R$	$V_{RWM}=15\text{V}$			1	$\mu\text{A}$
Peak pulse current	$I_{PP}$	$t_P=8/20\mu\text{s}$			12	A
Clamping voltage	$V_C$	$I_{PP}=1\text{A}$ , $t_P=8/20\mu\text{s}$			24	V
		$I_{PP}=12\text{A}$ , $t_P=8/20\mu\text{s}$			30	
Junction capacitance	$C_J$	$V_R=0\text{V}$ , $f=1\text{MHz}$			60	pF

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

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



**FIG.2: Pulse waveform (8/20 $\mu\text{s}$ )**

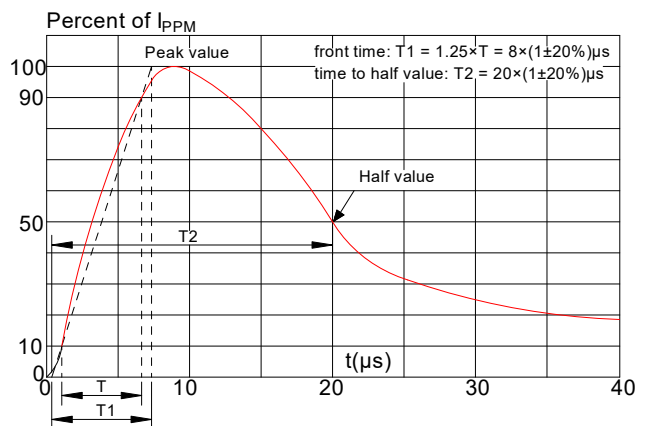


FIG.3: Pulse derating curve

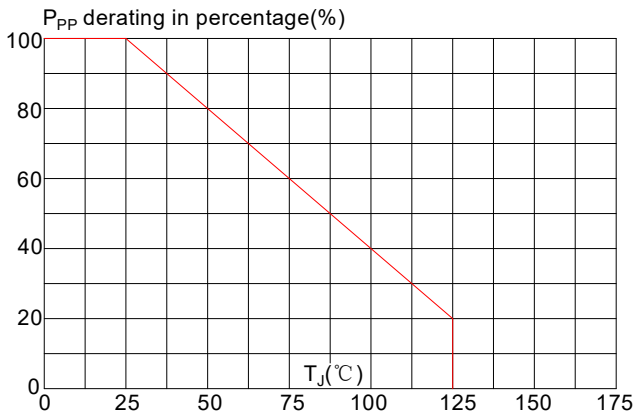
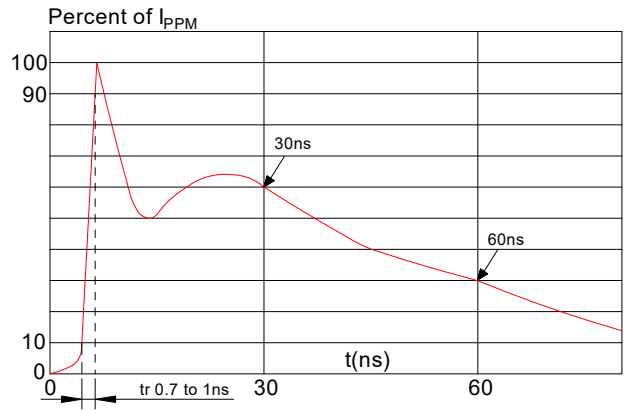
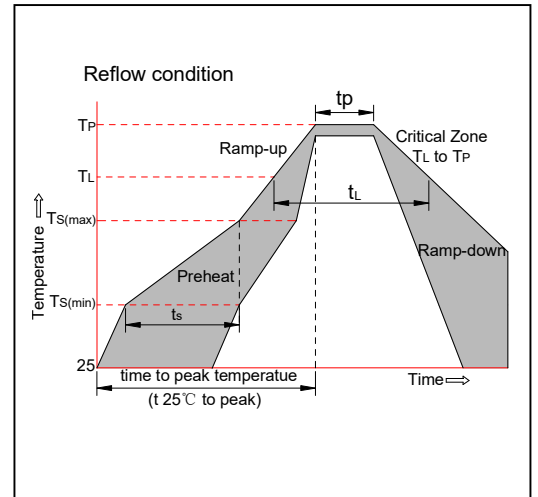


FIG.4: ESD clamping (8kV contact)

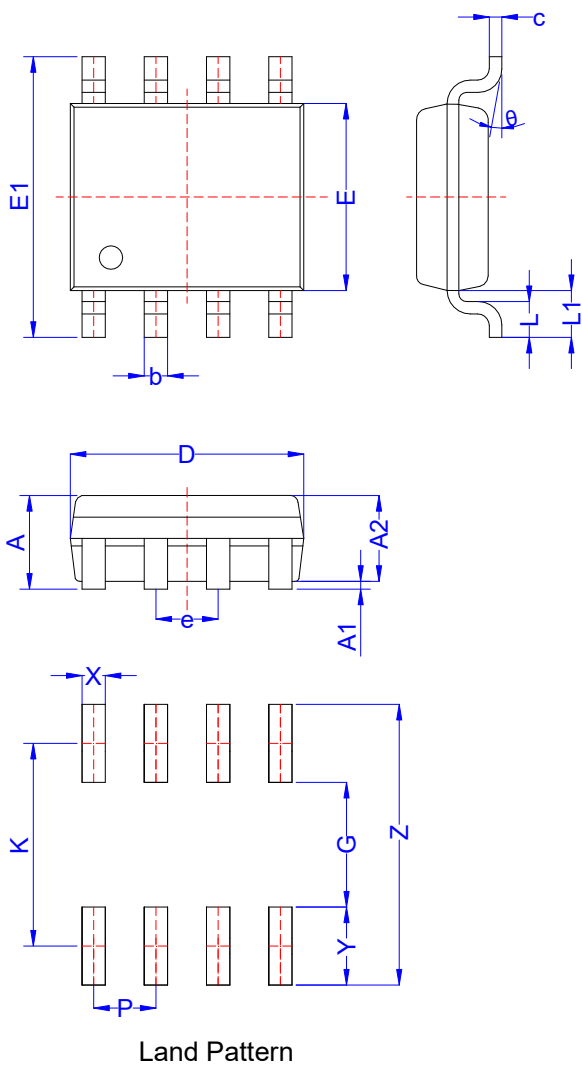


SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max ( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature ( $T_L$ ) (Liquidus)	+217°C
	-Temperature ( $t_L$ )	60-150 secs.
Peak Temp ( $T_p$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp ( $T_p$ )		8 min. Max
Do not exceed		+260°C

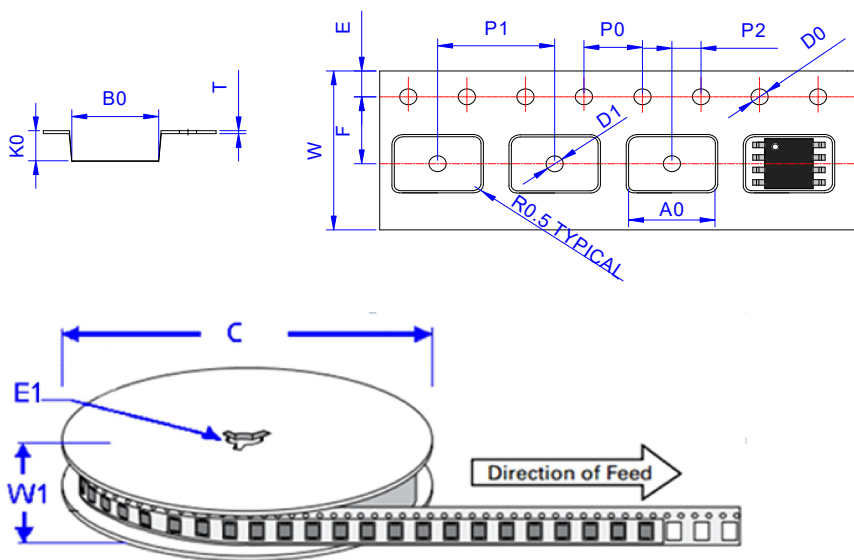


PACKAGE MECHANICAL DATA



Symbol	Millimeter			Inches		
	Min	Typ	Max	Min	Typ	Max
A	1.35	1.55	1.70	0.053	0.061	0.067
A1	0.04	0.11	0.18	0.002	0.004	0.007
A2	1.30	1.40	1.55	0.051	0.055	0.061
b	0.31	0.41	0.51	0.012	0.016	0.020
c	0.17	0.21	0.25	0.007	0.008	0.010
D	4.65	4.90	5.10	0.183	0.193	0.201
E	3.70	3.90	4.10	0.146	0.154	0.161
E1	5.80	6.00	6.20	0.228	0.236	0.244
e	1.14	1.27	1.40	0.045	0.050	0.055
L	0.40	0.50	0.77	0.016	0.020	0.030
L1	0.825	1.025	1.225	0.032	0.040	0.048
θ	0°	4°	8°	0°	4°	8°
G	3.00			0.118		
K	5.20			0.205		
P	1.27			0.050		
X	0.60			0.024		
Y	2.20			0.087		
Z	7.40			0.291		

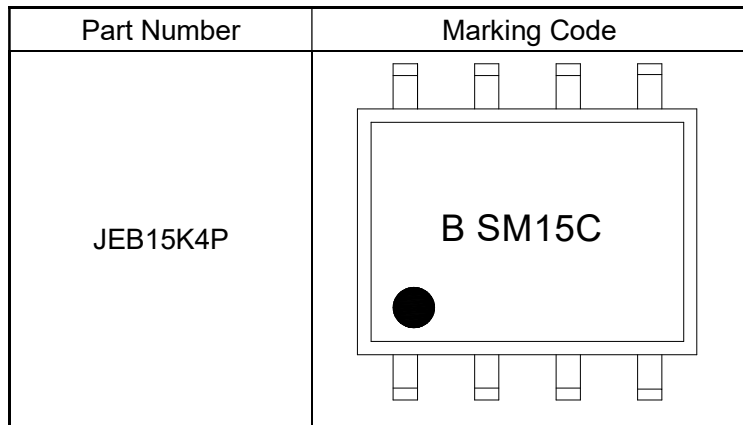
**TAPE AND REEL SPECIFICATION-SOP-8**



Symbol	Millimeters	Inches
	Typ.	Typ.
A0	6.40	0.252
B0	5.30	0.209
C	330	13.0
D0	1.50	0.059
D1	1.50	0.059
E1	13.30	0.524
E	1.75	0.069
F	5.50	0.217
K0	2.10	0.083
P0	4.00	0.157
P1	8.00	0.315
P2	2.00	0.079
T	0.24	0.009
W	12.00	0.472
W1	15.70	0.618

PART No.	PACKAGE TYPE	QUANTITY(PCS) REEL	DESCRIPTION
JEB15K4P	SOP-8	4,000	13 inch reel pack

**MARKING CODE**




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