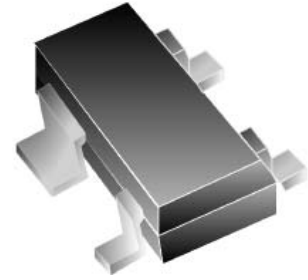
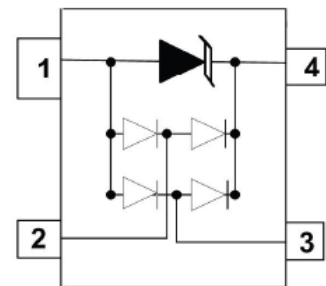


FEATURES

- ✧ 300 Watts peak pulse power per line ($t_P=8/20\mu s$)
- ✧ Protects four I/O lines
- ✧ Low clamping voltage
- ✧ Low operating voltage
- ✧ Low capacitance
- ✧ Compliant to Halogen-free
- ✧ Suffix "-Q1" for AEC-Q101

**SOT-143****PIN Configuration****MAIN APPLICATIONS**

- ✧ USB power and data line protection
- ✧ Digital video interface (DVI)
- ✧ Notebook computers
- ✧ Video graphics cards
- ✧ Monitors and flat panel displays
- ✧ 10/100 ethernet
- ✧ SIM ports
- ✧ ATM interfaces

PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 20A (8/20 μs)

MECHANICAL CHARACTERISTICS

- ✧ Package: SOT-143
- ✧ Molding compound flammability rating: UL 94V-0
- ✧ Lead finish: Lead free
- ✧ Marking code: R05

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}	300	W
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 (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	$V_{RWM}=5\text{V}$			0.1	μA
Clamping voltage (I/O pin to ground)	V_C	$I_{PP}=5\text{A}$, $t_P=8/20\mu\text{s}$		11	12.5	V
		$I_{PP}=20\text{A}$, $t_P=8/20\mu\text{s}$		16	18	
Clamping voltage (V_{CC} to ground))	V_C	$I_{PP}=10\text{A}$, $t_P=8/20\mu\text{s}$		10	12	V
		$I_{PP}=25\text{A}$, $t_P=8/20\mu\text{s}$		13	20	
Junction capacitance	C_J	$V_{RWM}=0\text{V}$, $f=1\text{MHz}$ Any I/O pin to ground		3	3.5	pF
		$V_{RWM}=0\text{V}$, $f=1\text{MHz}$ Between I/O pins		1.5	2	

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

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

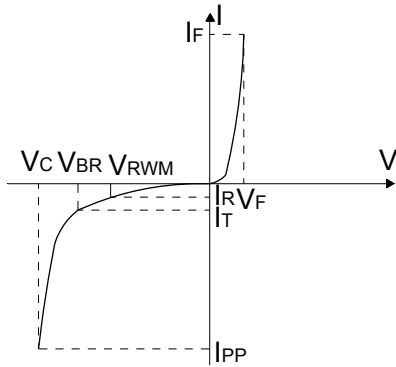


FIG.2: Pulse waveform (8/20 μs)

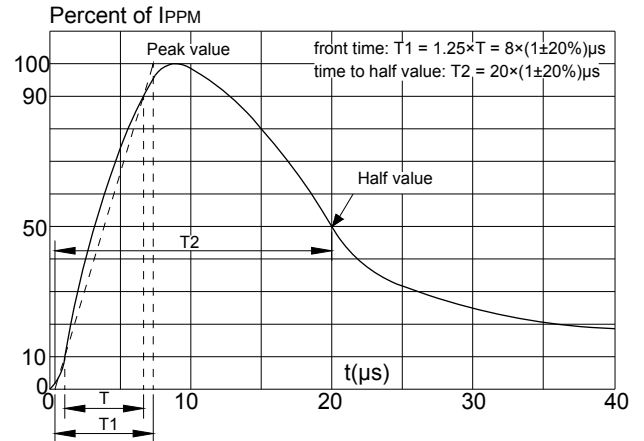


FIG.3: Pulse derating curve

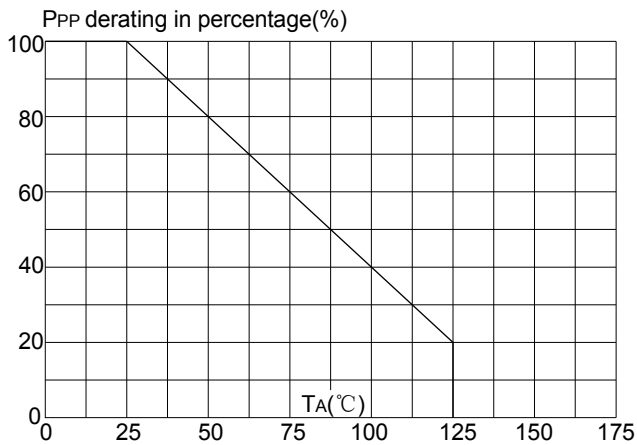
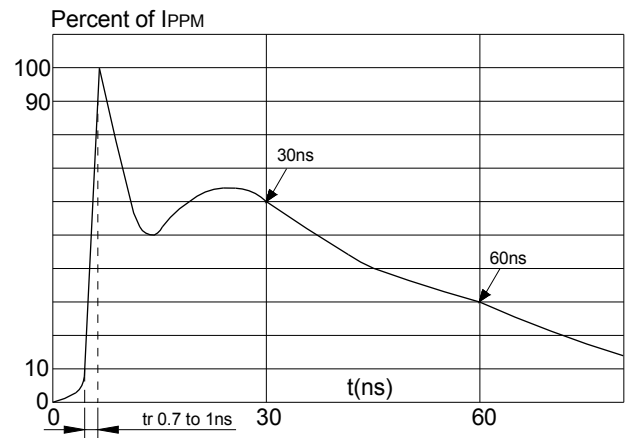
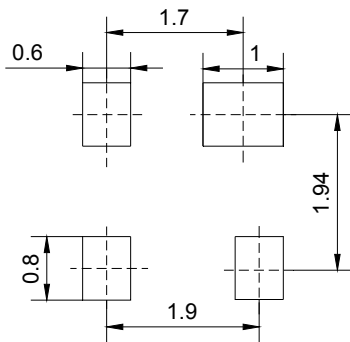
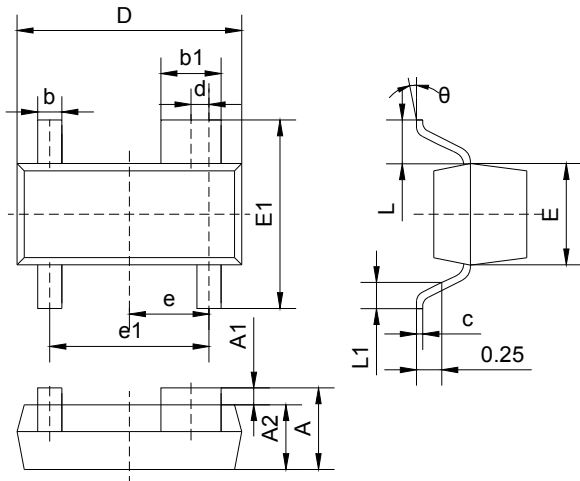


FIG.4: ESD clamping (30kV contact)



SOT-143 PACKAGE MECHANICAL DATA



Recommended Land Pattern

Symbol	Millimeter			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.90	1.00	1.15	0.035	0.039	0.045
A1	0.00	0.065	0.10	0.000	0.003	0.004
A2	0.90	1.00	1.10	0.035	0.039	0.043
b	0.30	0.40	0.50	0.012	0.016	0.020
b1	0.75	0.81	0.90	0.030	0.032	0.035
c	0.05	0.10	0.15	0.002	0.004	0.006
D	2.70	2.90	3.10	0.106	0.114	0.122
d	0.20Typ.			0.008Typ.		
E	1.10	1.30	1.50	0.043	0.051	0.059
E1	2.20	2.40	2.60	0.087	0.094	0.102
e	0.95Typ.			0.037Typ.		
e1	1.80	1.90	2.00	0.071	0.075	0.079
L	0.55Typ.			0.022Typ.		
L1	0.30	0.40	0.50	0.012	0.016	0.020
θ	0°	-	8°	0°	-	8°