

Features

- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 32A (8/20 μs)
- RoHS Compliant
- AEC-Q101 qualified

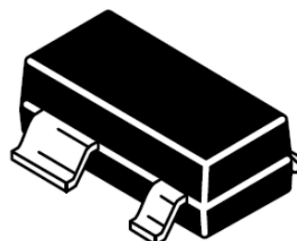
Applications

- USB Power & Data Line Protection
- Ethernet 10BaseT
- I²C Bus Protection
- Video Line Protection
- T1/E1 secondary IC Side Protection
- Microcontroller Input Protection
- ISDN S/T Interface
- WAN/LAN Equipment

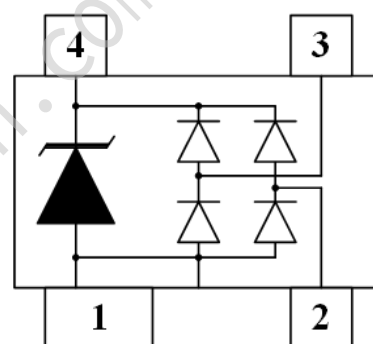
Mechanical Characteristics

- SOT-143 Package
- Molding Compound Flammability Rating : UL 94V-O
- Weight 10 Milligrams (Approximate)
- Quantity Per Reel : 3,000pcs
- Reel Size : 7 inch
- Lead Finish : Lead Free

Dimensions SOT-143



Pin Configuration



Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Current (8/20 μs)	P _{pp}	550	W
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 30	Kv
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{STJ}	-55 to +150	°C

Electrical Characteristics(TA=25°C unless otherwise specified)

Part Number	Device Marking	V _{RWM} (V)	V _{BR} (V)	I _T (mA)	V _C @1A	V _C		I _R μA (Max)	C (Pf) (Typ.)
						(Max)	(@A)		
SR05W	LK5	5	6	1	9.8	18	32	2	5

TYPIC CHARACTERISTICS

Figure 1. 8 x 20 μ s Waveform

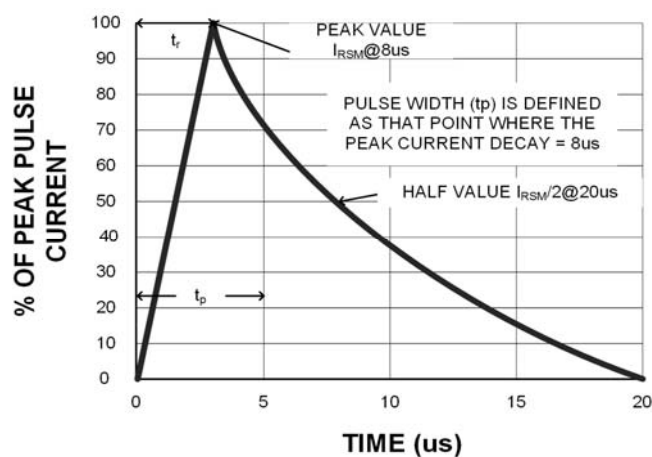


Figure 2. Power Derating Curve

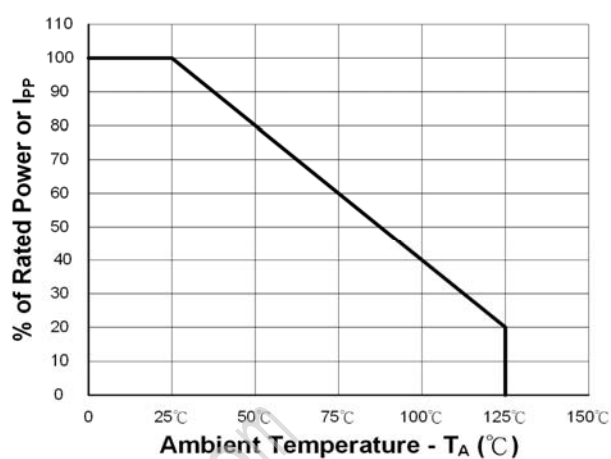
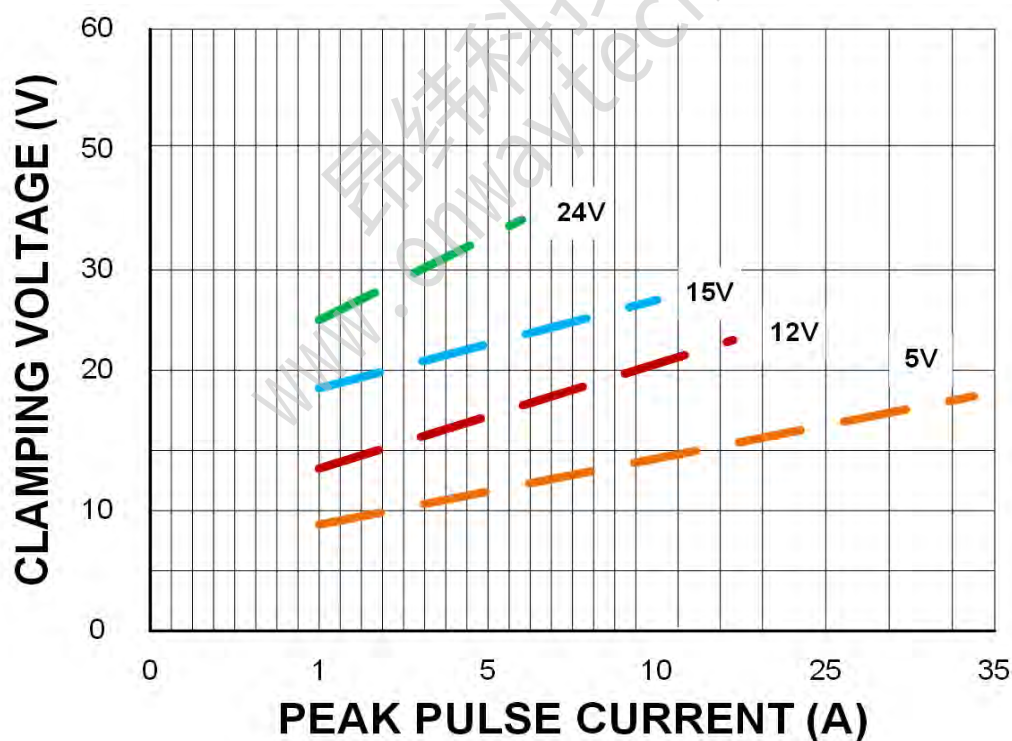


Figure 3. Clamping Voltage vs. Peak Pulse Current ($t_p=8/20 \mu$ s)



TYPIC CHARACTERISTICS

Figure 4. Typical Breakdown Voltage vs. Temperature

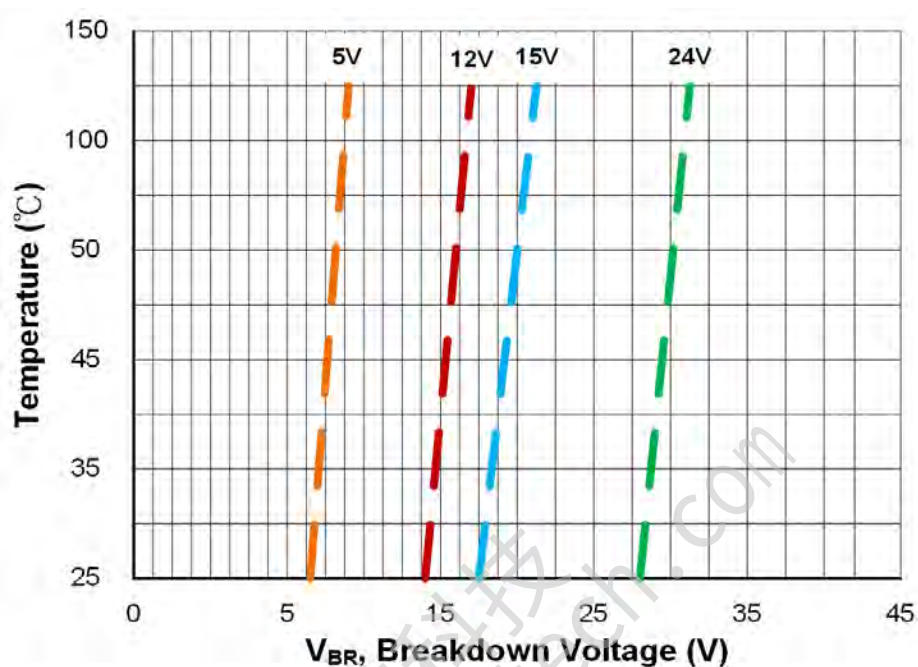
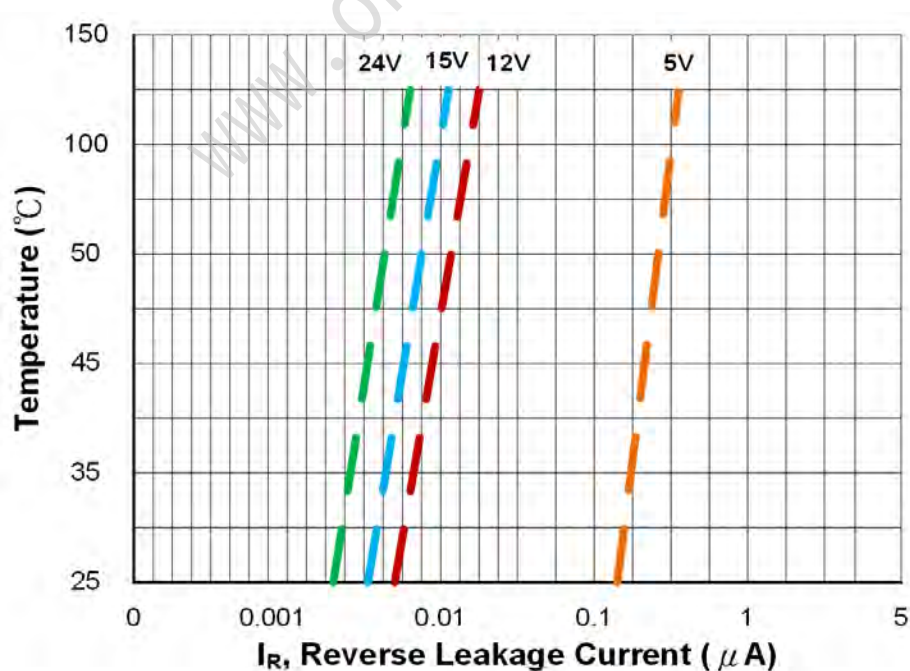
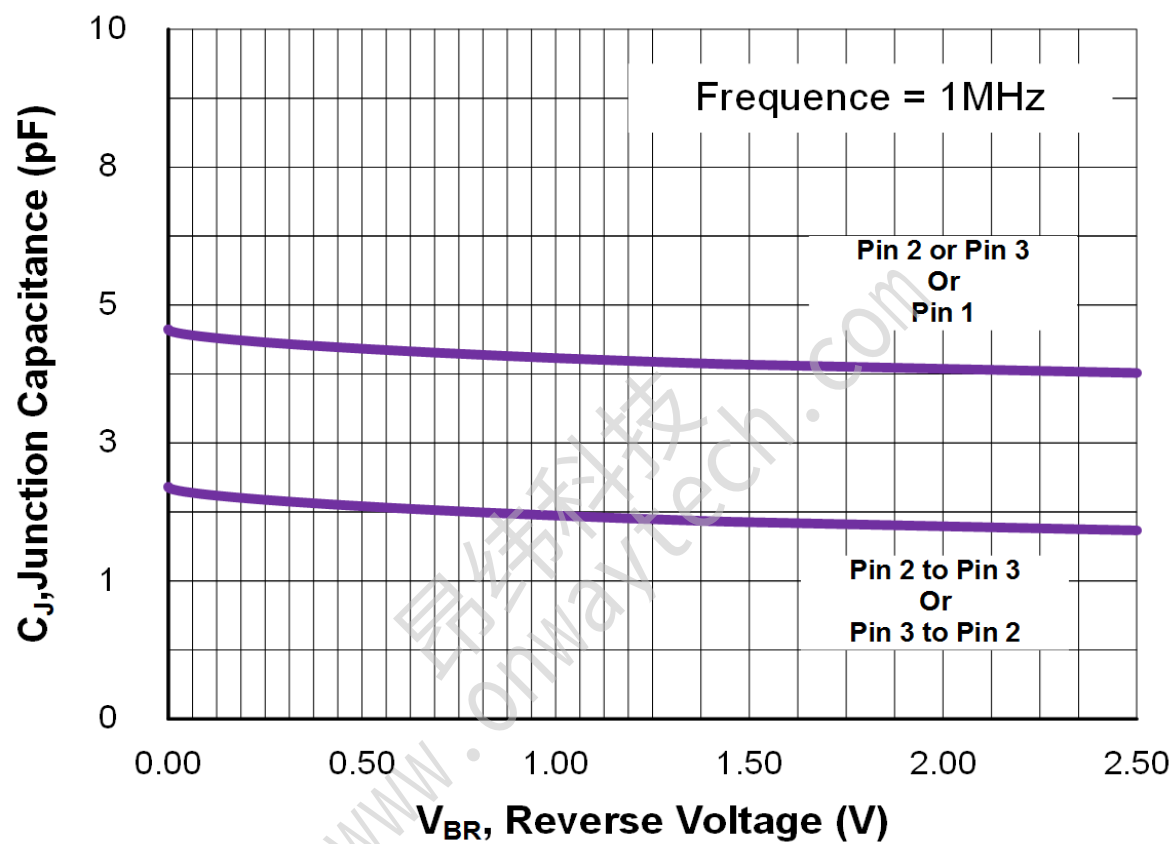


Figure 5. Typical Reverse Current vs. Temperature



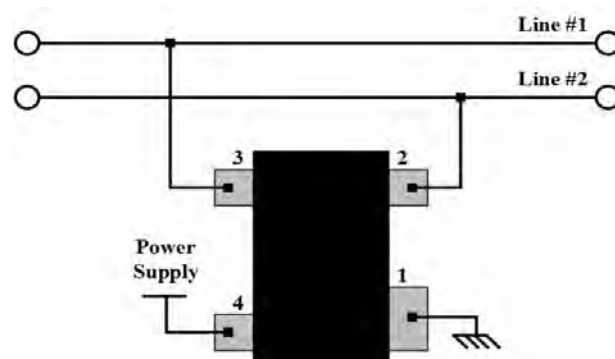
TYPIC CHARACTERISTICS

Figure 6. Typic Capacitance vs. Reverse Voltage



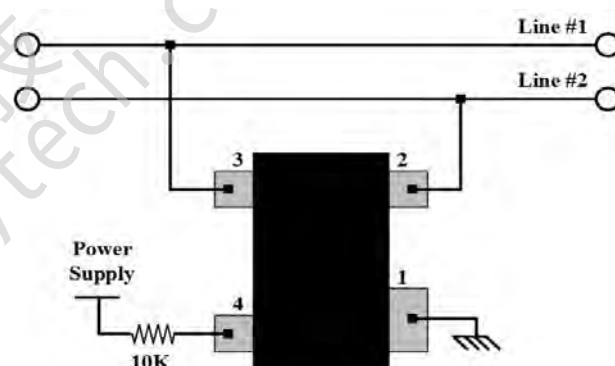
1. Data lines and power supply protection using Vcc as reference

To protect data lines and the power line, connect Pin 4 directly to the positive supply rail (Vcc). In this configuration the data lines are referenced to the supply voltage. The internal TVS diode prevents over-voltage on the supply rail. The path length is kept as short as possible to minimize parasitic inductance.'



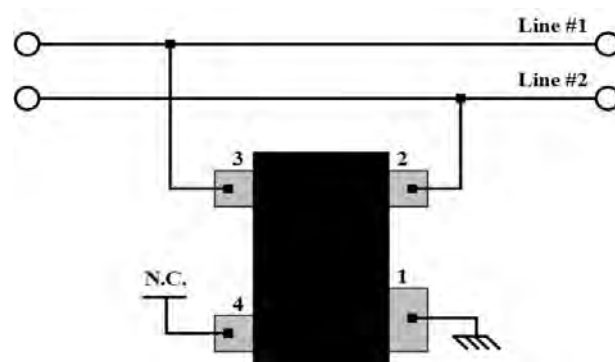
2. Data lines protection with bias and power supply isolation resistor

The SR05W serie can be isolated from the power supply by adding a series resistor between pin 4 and Vcc+. A value of 10k Ω is recommended. The internal TVS and steering diodes remain biased, providing the advantage of lower capacitance. The path length is kept as short as possible to minimize parasitic inductance.

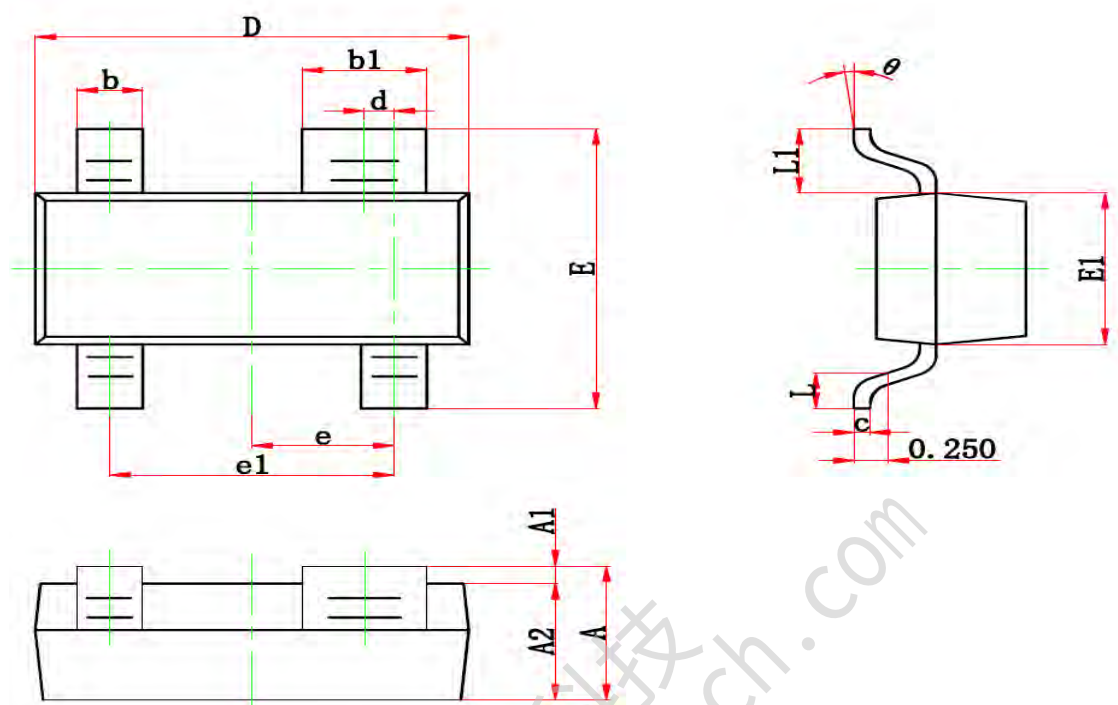


3. Data lines protection using internal TVS diodes as reference

In applications where no positive supply reference is available, or complete supply isolation is desired, the internal TVS may be used as the reference. In the case, pin 4 is not connected. The steering diodes will begin to conduct the voltage on the protected line exceeds the working voltage of the TVS (plus one diode drop).



SOT-143 Package Outline & Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
b1	0.750	0.900	0.030	0.035
c	0.080	0.160	0.003	0.006
D	2.800	3.000	0.110	0.118
d	0.200 TYP.		0.008 TYP.	
E	2.250	2.550	0.089	0.100
E1	1.200	1.400	0.047	0.055
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.300	0.500	0.012	0.020
L1	0.550 REF.		0.022 REF.	
θ	0°	8°	0°	8°