Elektronische Bauelemente

KS33K5

Voltage: 3.3 V

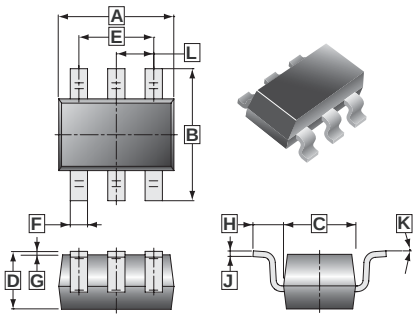
40 W Transient Voltage Suppressor Diode

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

- Designed to protect voltage sensitive components from ESD
- Excellent clamping capability, low leakage and fast response
- Cellular phones, MP3 players, digital cameras ... etc.
- Suitable for electronics where board space is a major design consideration

SOT-363



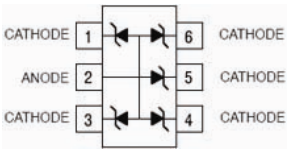
REF.	Millimeter Min.	Millimeter Max.	REF.	Millimeter Min.	Millimeter Max.
A	2.00	2.20	G	0.100 REF.	
B	2.15	2.45	H	0.525 REF.	
C	1.15	1.35	J	0.08	0.15
D	0.90	1.10	K	8°	
E	1.20	1.40	L	0.650 TYP.	
F	0.15	0.35			

FEATURES

- Response time is typically < 1 ns
- Low leakage
- Stand-off voltage: 3.3 V
- ESD rating of class 3 (> 15 kV) per human body model
- IEC61000-4-2 level 4 ESD protection

MARKING CODE

33K5



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)

Symbol	Parameter		Value	Units
V_{ESD}	ESD Voltage IEC61000-4-2 (ESD)	air discharge	15	KV
		contact discharge	8	
P_D	Total Power Dissipation on FR-5 board (Note 2)		150	mW
T_L	Lead Solder Temperature - Max. (10 sec duration)		260	°C
$R_{\theta JA}$	Thermal Resistance Junction-to-ambient		833	°C / W
T_J, T_{STG}	Junction and Storage Temperature Range		-55 ~ +150	°C

Stresses exceeding "Maximum Ratings" may damage the device. "Maximum Ratings" are stress ratings only. Functional operation above the recommended. Operating conditions is not implied. Extended exposure to stresses above the recommended operating conditions may affect device reliability.

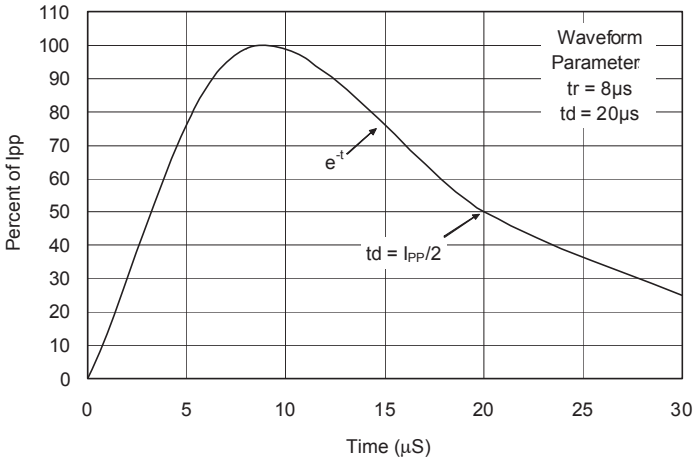
1. FR-5 = 1.0 x 0.75 x 0.62 in.
2. Only 1 diode under power. For all 5 diodes under power, PD will be 20%. Mounted on FR-4 board with min pad.

ELECTRICAL CHARACTERISTICS (T = 25°C unless otherwise specified)

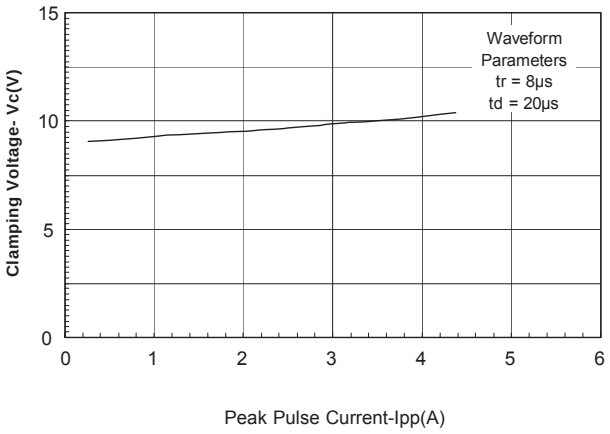
Type Number	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Reverse Stand-Off Voltage	V_{RWM}	-	-	3.3	V	
Reverse Leakage Current	I_R	-	80	250	nA	V_{RWM} = 3.3 V
Peak Pulse Current	I_{PP}	-	-	3.5	A	
Clamping Voltage	V_C	-	-	9.0	V	I_{PP} = 1 A
Clamping Voltage	V_C	-	-	12.0	V	I_{PP} = 3.5 A
Reverse Breakdown Voltage	V_{BR}	5.35	5.7	5.85	V	I_T = 1 mA, T_{AMB} = 25 °C
Test Current	I_T	-	1.0	-	mA	
Junction Capacitance	C	-	30	40	pF	F = 1MHz, T_{AMB} = 25°C
Peak Power Dissipation	P_{PK}	-	-	40	W	(@8x20 µS,@ T_A<&= 25°C; Non-repetitive current per Figure 1. Derate per Figure 2)

RATINGS AND CHARACTERISTICS CURVES

Pulse Waveform

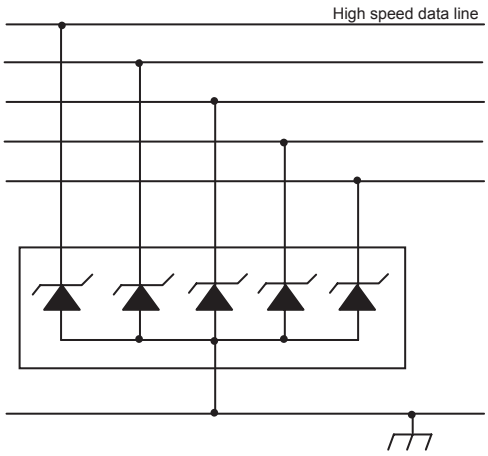


Clamping Voltage vs. Peak Pulse Current

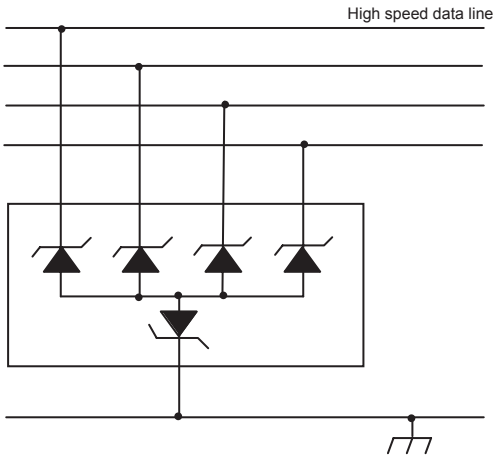


APPLICATION NOTE

The KS33K5 is designed for the uni-direction of up to five lines of bi-direction protection of four lines from the damage caused by Electronic Discharge (ESD) and surge pulses. The KS33K5 may be used on line where the signal polarities are above or below ground.KS33K5 can with stand and provides protection from a surge of 40 watts peak pulse power per line for a 8/20 μs waveform



Typical application for uni-directional protection of five lines.



Typical application for bi-directional protection of four lines.