QSBT40

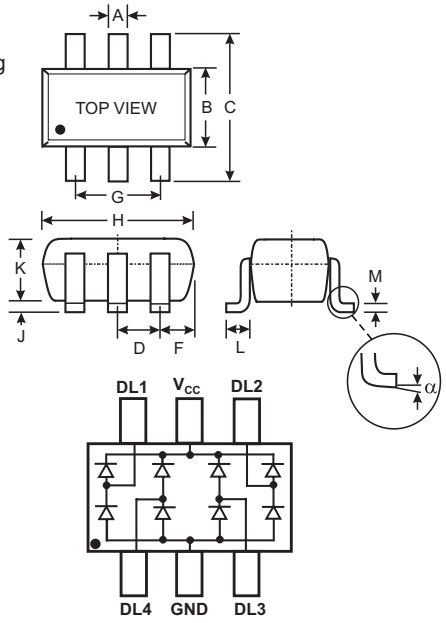
QUAD DATA LINE SCHOTTKY BUS TERMINATOR

Features

- Low Forward Voltage Drop
- Fast Switching
- Very High Density
- Ultra-Small Surface Mount Package PN Junction Guard Ring for Transient and ESD Protection
- Provide transient protection for high-speed data lines in accordance with:
  IEC61000-4-2 (ESD) 15kV (Air), 8kV (Contact)
  IEC61000-4-4 (EFT) 80A (tp = 5/50 ns)
  IEC61000-4-5 (Lightning) Class 3
- **Lead Free/RoHS Compliant (Note 5)**

Mechanical Data

- Case: SOT-363
- Case material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe). Please See Ordering Information, Note 7, on Page 2
- Polarity: See Diagram
- Marking Code: KST (See Page 2)
- Weight: 0.006 grams (approx.)



SOT-363		
Dim	**Min**	**Max**
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
F	0.30	0.40
H	1.80	2.20
J	—	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.25
α	0°	8°
All Dimensions in mm		

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	V
Forward Continuous Current (Note 1)	I_{FM}	200	mA
Non-Repetitive Peak Forward Surge Current @ t < 1.0s	I_{FSM}	600	mA
Power Dissipation (Note 1)	P_d	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$	625	°C/W
Operating Temperature Range	T_j	-55 to +125	°C
Storage Temperature Range	T_{STG}	-65 to +125	°C

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	30	—	—	V	I_R = 100μA
Forward Voltage	V_F	—	—	280 350 450 550 1000	mV	I_F = 0.1mA, tp < 300μS I_F = 1.0mA, tp < 300μS I_F = 10mA, tp < 300μS I_F = 30mA, tp < 300μS I_F = 100mA, tp < 300μS
Reverse Current (Note 2)	I_R	—	—	2	μA	V_R = 25V
Total Capacitance	C_T	—	10.0 6.5	—	pF	V_R = 0, f = 1.0MHz (Note 3) V_R = 0, f = 1.0MHz (Note 4)
Reverse Recovery Time	t_{rr}	—	—	5.0	ns	I_F = I_R = 10mA, I_{rr} = 0.1 x I_R, R_L = 100Ω

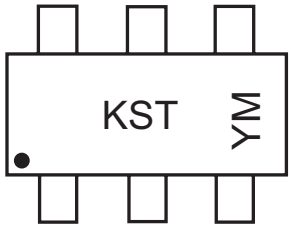
Notes:
1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
2. Short duration test pulse used to minimize self-heating effect.
3. At V_R = 0V, DL(X) to V_{CC} or GND.
4. At V_R = 0V, between Data Lines (e.g., DL1 and DL4).
5. No purposefully added lead.

Ordering Information (Note 6)

Device	Packaging	Shipping
QSBT40-7-F	SOT-363	3000/Tape & Reel

Notes: 6. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



KST = Product Type Marking Code
YM = Date Code Marking
Y = Year ex: N = 2002
M = Month ex: 9 = September

Date Code Key

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	M	N	P	R	S	T	U	V	W	X	Y	Z

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

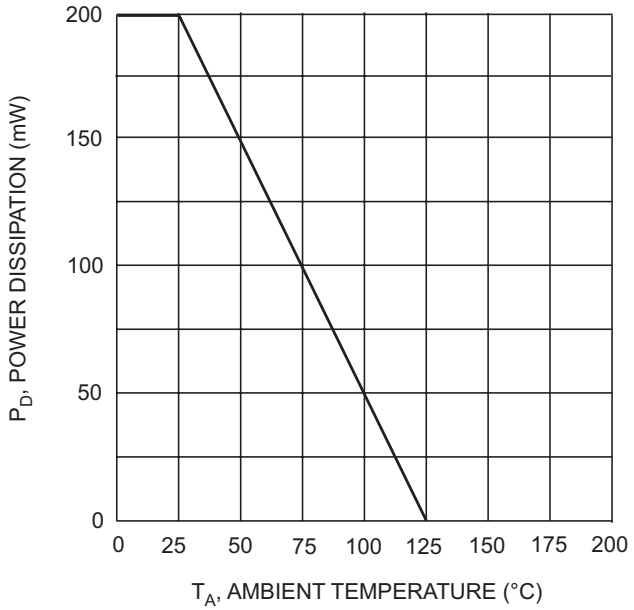


Fig. 1, Max Power Dissipation vs Ambient Temperature

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