



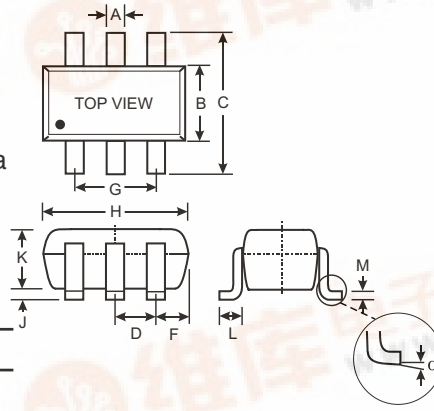
# QSBT40

## QUAD DATA LINE SCHOTTKY BUS TERMINATOR

NEW PRODUCT

### Features

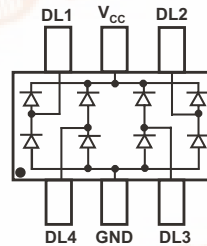
- Low Forward Voltage Drop
- Fast Switching
- Very High Density
- Ultra-Small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection
- Provide transient protection for high-speed data lines in accordance with:
  - IEC61000-4-2 (ESD) 15kV (Air), 8kV (Contact)
  - IEC61000-4-4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



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
$\alpha$	0°	8°
All Dimensions in mm		

### Mechanical Data

- Case: SOT-363, Molded Plastic
- Case material - UL Flammability Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 0.006 grams (approx.)
- Marking Code: KST (See Page 2)



### Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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 @ $t < 1.0\text{s}$	$I_{FSM}$	600	mA
Power Dissipation (Note 1)	$P_d$	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Operating Temperature Range	$T_j$	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65 to +125	$^\circ\text{C}$

### Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

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

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  $V_R = 0\text{V}$ , DL(X) to  $V_{CC}$  or GND.

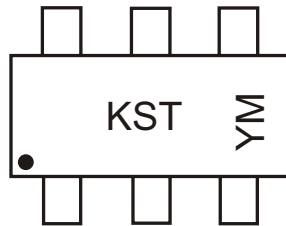


**Ordering Information** (Note 4)

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

Notes: 4. 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
Code	M	N	P	R	S	T	U	V	W

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