Surface Mount Transient Voltage Suppressors

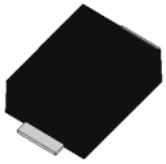
QXS1K40CF

Description

UNS1K40CF TVS is designed for DC power supply equipment in outdoor exposure environment.It is used to replace the traditional PTC, GDT and TVS combination solution, which is widely used to DC port.etc

Working Voltage: 40V

SMBF



Features

- Glass passivated junction
- Excellent clamping capability
- Low profile package and low inductance
- High peak pulse voltage capability on 1.2/50 μs-8/20 μs@2Ω waveform.
- Fast response time: typically less than 1.0ps from 0V to V_{BR} min
- High temperature soldering:260℃/40s at terminals.
- Plastic package has underwriters laboratory flammability 94V-0.
- For surface mounted application in order to optimize board space

Functional Diagram

Bi-directional

Applications

and other vulnerable circuits used in Computer, Industrial and Consumer electronic applications.

Maximum Ratings and Thermall Characteristics(TA=25C Unless otherwise noted)

Parameter	Symbol	Value	Units
Operating junction temperature range	T_J	-55 to +150	°C
Power Dissipation on Infinite Heat Sink at T_L=75°C	P_D	6.5	W
Peak pulse voltage on 1.2/50 μs-8/20 μs@2Ω waveform	V_{PP}	2000	V
Storage temperature range	T_{STG}	-55 to +150	°C

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Electrical Characteristics(@25C unless otherwise Specified)

Part Number	Marking	Reverse Stand-Off Voltage V_{RWM}(V)	Breakdown Voltage V_{BR} (V) @I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C @I_{PP} (V)	Maximum Peak pulse voltage V_{PP} (V)	Maximum Reverse Leakage I_R @V_{RWM} (μA)
Bi-Polar			MIN	MAX				
QXS1K40CF	1K40CF	40	44.0	49.1	1	75	2000	1

NOTE1: Surge waveform:1.2/50 μ s-8/20 μ s@2Ω

V_R ： Stand-off Voltage -- Maximum voltage that can be applied

V_{BR}：Breakdown Voltage

V_C：Clamping Voltage -- Peak voltage measured across the suppressor at a specified V_{PP}

I_R：Reverse Leakage Current

Ratings and Characteristics Curves(TA=25C unless otherwise noted)

Figure 1-Pulse Waveform

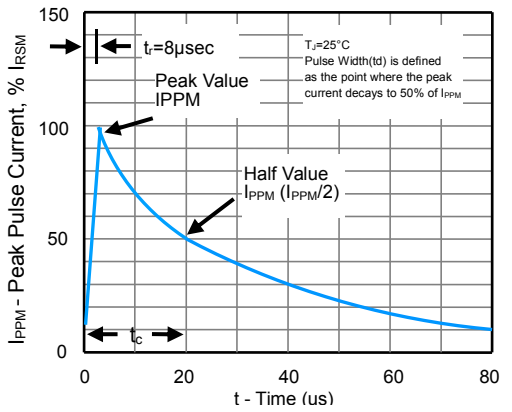
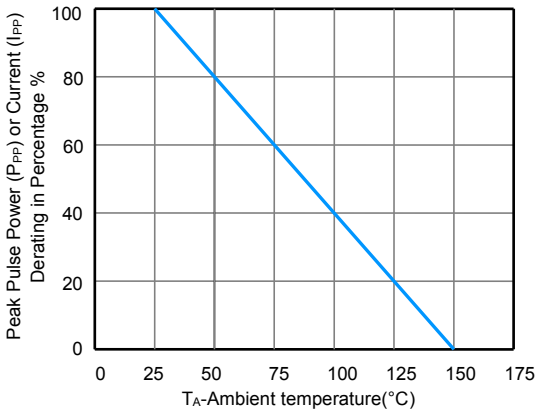
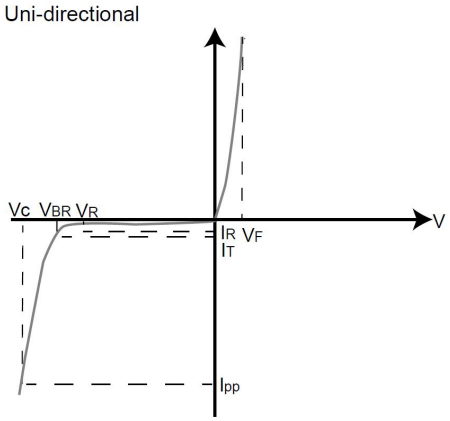
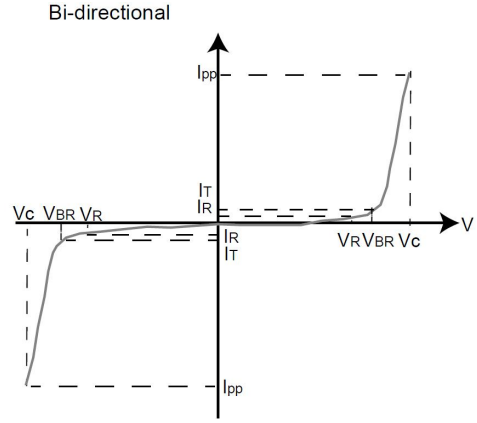


Figure 2-Pulse Derating Curve



I-V Curve Characteristics





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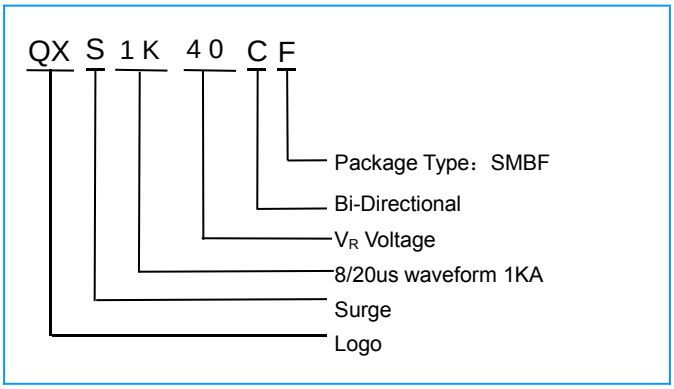
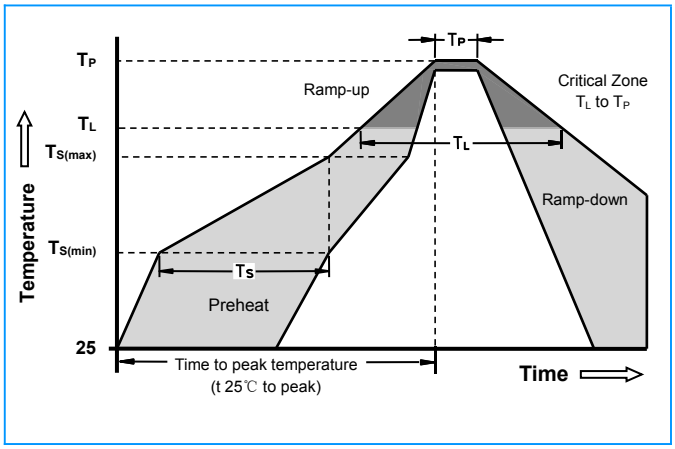
Part Numbering



Soldering Parameters



Reflow Condition		Lead–free assembly
Pre Heat	-Temperature Min ($T_{s(min)}$)	150°C
	-Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 -180 Seconds
Average ramp up rate (Liquidus Temp T_L) to peak		3°C/second max
$T_{S(max)}$ to TL - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (min to max) (t_s)	60 -150 Seconds
Peak Temperature (T_P)		260 +0/-5°C
Time within 5°C of actual peak Temperature (t_p)		20-40 Seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max
Do not exceed		260°C

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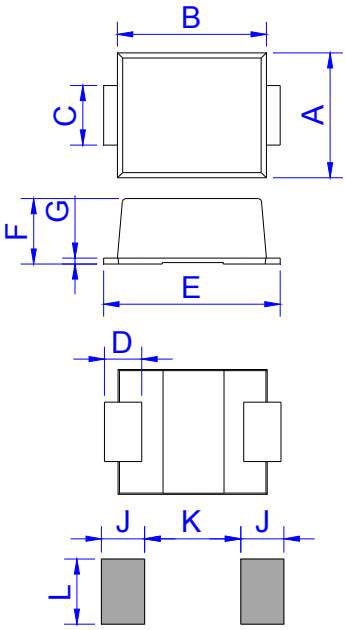
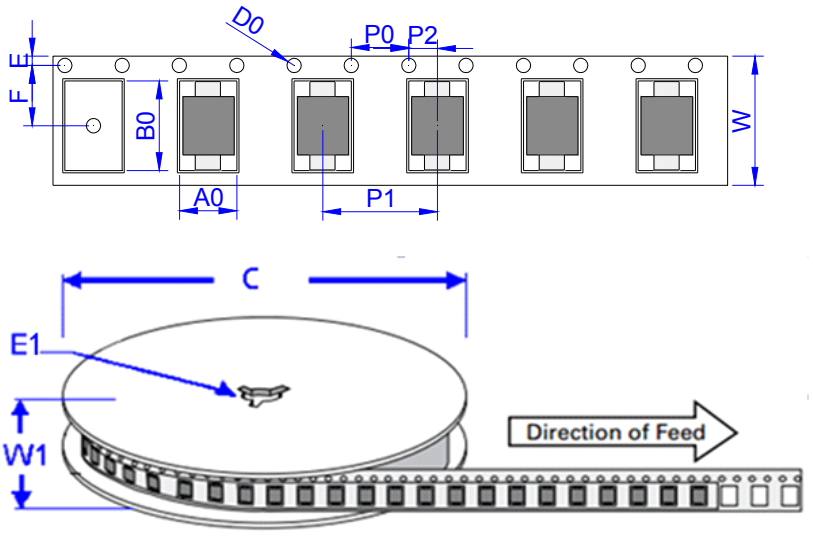


SMBF

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.90	4.50	0.154	0.177
B	4.65	5.15	0.183	0.203
C	1.85	2.15	0.073	0.085
D	0.60		0.024	
E	5.60	6.00	0.220	0.236
F	2.05	2.35	0.081	0.093
G	0.12	0.28	0.005	0.011
J	2.00		0.079	
K		3.20		0.126
L	2.30		0.091	



Ref.	Dimensions	
	Millimeters	Inches
A0	4.50±0.3	0.177 ± 0.012
B0	6.10±0.3	0.240 ± 0.012
C	330.0	13.0
D0	1.55±0.1	0.061 ± 0.004
E	1.75±0.2	0.069 ± 0.008
E1	13.3±0.3	0.524± 0.012
F	5.5±0.2	0.217 ± 0.008
P0	4.00±0.2	0.157 ± 0.008
P1	8.00±0.2	0.315 ± 0.008
P2	2.00±0.2	0.079 ± 0.008
W	12.0±0.2	0.472 ± 0.008
W1	15.7±2.0	0.618 ± 0.079

PART No.	UNIT WEIGHT (g/PCS) typ.	REEL （PCS）	PER CARTON （PCS）	REEL DIAMETERS （MM）
QXS1K40CF	0.13	3000	48000	330