20A, 80V Low V_F Trench Schottky Surface Mount Rectifier

FEATURES

- Patented Trench Schottky technology
- Excellent high temperature stability
- Low forward voltage
- Lower power loss/ high efficiency
- High forward surge capability
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	20	A
V_{RRM}	80	V
I_{FSM}	200	A
$T_{J\ MAX}$	150	°C
Package	SMPC4.0	
Configuration	Single die	

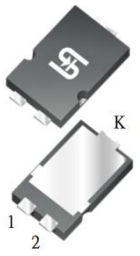
Pb-Free RoHS COMPLIANT HALOGEN FREE

APPLICATIONS

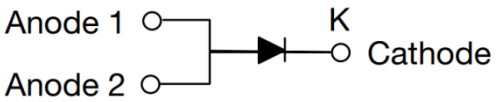
- Switching mode power supply (SMPS)
- Adapters
- DC to DC converter

MECHANICAL DATA

- Case: SMPC4.0
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.095g (approximately)



SMPC4.0



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**TSPB20U80S**	**UNIT**
Marking code on the device		B20U80	
Repetitive peak reverse voltage	V_{RRM}	80	V
Reverse voltage, total rms value	$V_{R(RMS)}$	56	V
Forward current	I_F	20	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	200	A
Junction temperature	T_J	- 55 to +150	°C
Storage temperature	T_{STG}	- 55 to +150	°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\Theta JL}$	10	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	10	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage(1)	I_F = 10A, T_J = 25°C	V_F	0.48	0.56	V
	I_F = 20A, T_J = 25°C		0.56	0.64	V
	I_F = 10A, T_J = 125°C		0.43	0.51	V
	I_F = 20A, T_J = 125°C		0.54	0.62	V
Reverse current @ rated V_R(2)	T_J = 25°C	I_R	-	300	μA
	T_J = 125°C		-	75	mA

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
TSPB20U80S	SMPC4.0	6,000 / Tape & Reel

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

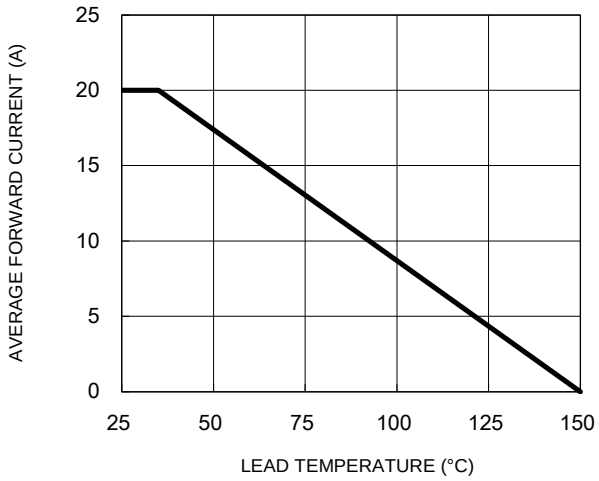


Fig.2 Typical Junction Capacitance

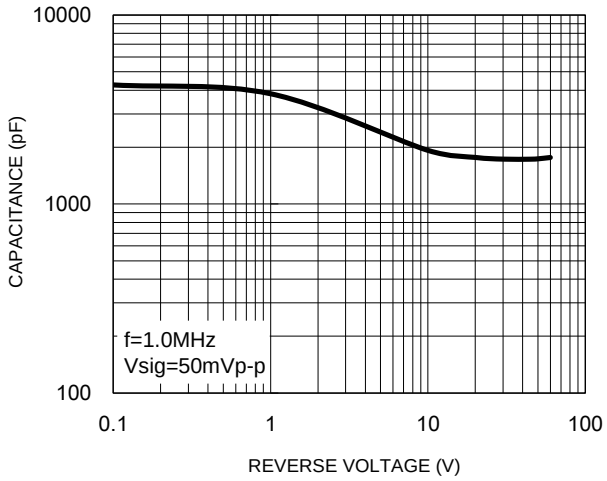


Fig.3 Typical Reverse Characteristics

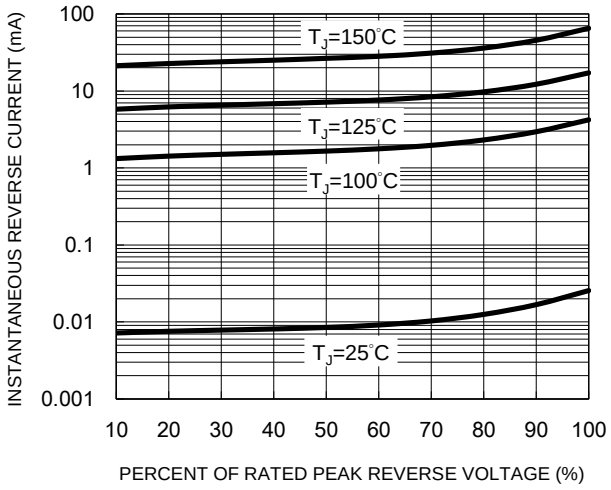
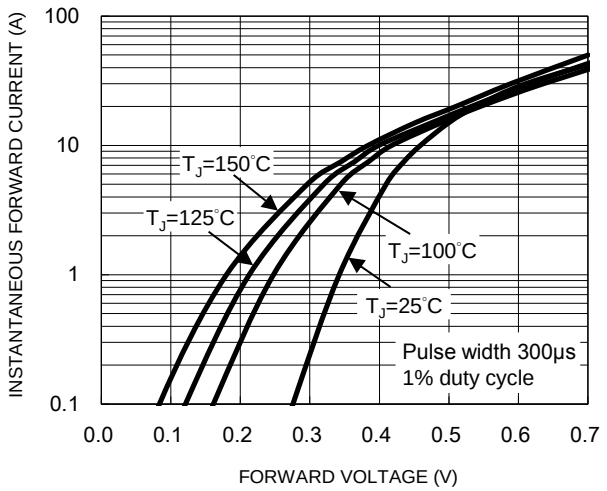
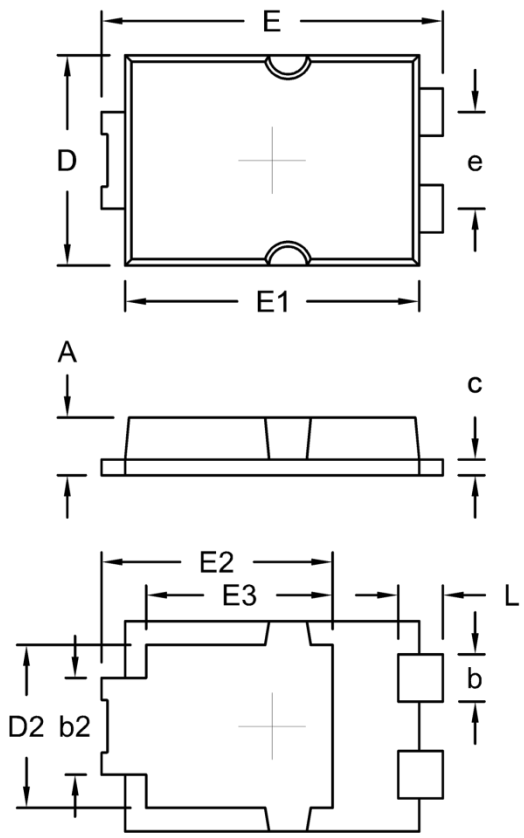


Fig.4 Typical Forward Characteristics



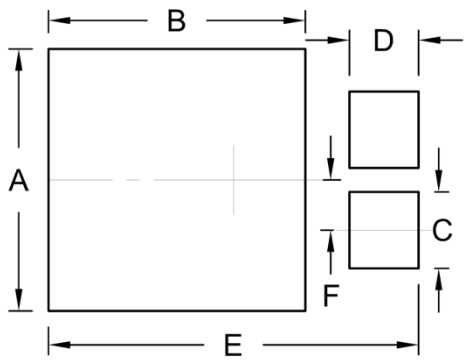
PACKAGE OUTLINE DIMENSIONS

SMPC4.0



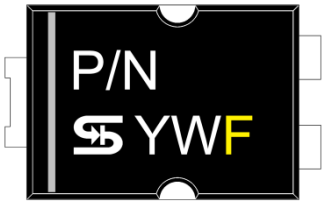
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.00	1.20	0.039	0.047
b	0.75	1.05	0.030	0.041
b2	1.69	1.99	0.067	0.078
c	0.20	0.40	0.008	0.016
D	3.95	4.05	0.156	0.159
D2	2.95	3.25	0.116	0.128
E	6.35	6.65	0.250	0.262
E1	5.55	5.65	0.219	0.222
E2	4.25	4.55	0.167	0.179
E3	3.40	3.70	0.134	0.146
e	1.69	1.99	0.067	0.078
L	0.70	1.00	0.028	0.039

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	4.80	0.189
B	4.72	0.186
C	1.40	0.055
D	1.27	0.050
E	6.80	0.268
F	0.92	0.036

MARKING DIAGRAM



P/N = Marking Code
YW = Date Code
F = Factory Code

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