

10A, 20V - 200V Schottky Barrier Rectifier

FEATURES

- AEC-Q101 qualified available
- Low power loss, high efficiency
- Guard ring for overvoltage protection
- High surge current capability
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

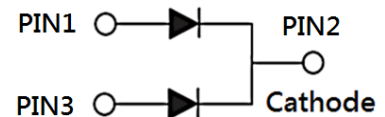
APPLICATIONS

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

MECHANICAL DATA

- Case: ITO-220AB
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.70g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	10	A
V_{RRM}	20 - 200	V
I_{FSM}	120	A
T_{JMAX}	125, 150	°C
Package	ITO-220AB	
Configuration	Dual dies	


ITO-220AB


ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)											
PARAMETER	SYMBOL	SRF 1020	SRF 1030	SRF 1040	SRF 1050	SRF 1060	SRF 1090	SRF 10100	SRF 10150	SRF 10200	UNIT
Marking code on the device		SRF 1020	SRF 1030	SRF 1040	SRF 1050	SRF 1060	SRF 1090	SRF 10100	SRF 10150	SRF 10200	
Repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	90	100	150	200	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	35	42	63	70	105	140	V
Forward current	I_F	10									A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	120									A
Junction temperature	T_J	-55 to +125				-55 to +150					°C
Storage temperature	T_{STG}	-55 to +150									°C

THERMAL PERFORMANCE						
PARAMETER		SYMBOL	TYP	UNIT		
Junction-to-case thermal resistance	SRF1020 SRF1030 SRF1040 SRF1050 SRF1060	$R_{\theta JC}$	3.5	°C/W		
	SRF1090 SRF10100 SRF10150 SRF10200		4.0	°C/W		

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)								
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT		
Forward voltage per diode ⁽¹⁾	SRF1020 SRF1030 SRF1040	$I_F = 5\text{A}, T_J = 25^\circ\text{C}$	V_F	-	0.55	V		
	SRF1050 SRF1060			-	0.70	V		
	SRF1090 SRF10100			-	0.90	V		
	SRF10150 SRF10200			-	1.00	V		
	SRF1020 SRF1030 SRF1040 SRF1050 SRF1060			$T_J = 25^\circ\text{C}$	I_R	-	500	μA
	SRF1090 SRF10100 SRF10150 SRF10200					-	100	μA
Reverse current @ rated V_R per diode ⁽²⁾	SRF1020 SRF1030 SRF1040	$T_J = 100^\circ\text{C}$	I_R	-	15	mA		
	SRF1050 SRF1060			-	10	mA		
	SRF1090 SRF10100 SRF10150 SRF10200			-	-	mA		

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Reverse current @ rated V_R per diode ⁽²⁾	SRF1020 SRF1030 SRF1040 SRF1050 SRF1060	$T_J = 125^\circ\text{C}$	I_R	-	-	mA
	SRF1090 SRF10100 SRF10150 SRF10200			-	5	mA

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION		
ORDERING CODE ⁽¹⁾⁽²⁾	PACKAGE	PACKING
SRF10x	ITO-220AB	50 / Tube
SRF10xH	ITO-220AB	50 / Tube

Notes:

1. "x" defines voltage from 20V(SRF1020) to 200V(SRF10200)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

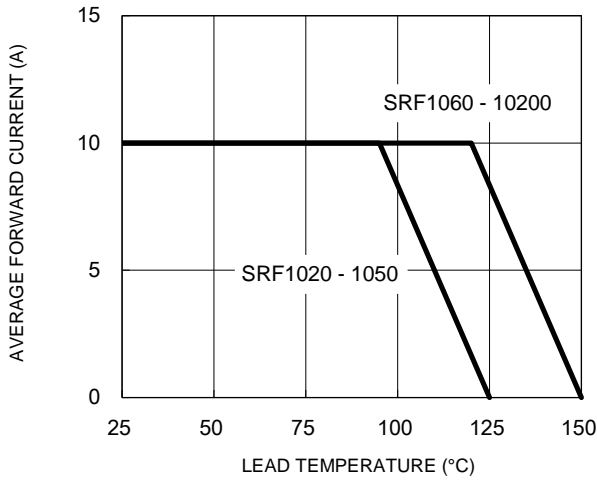


Fig.2 Typical Junction Capacitance

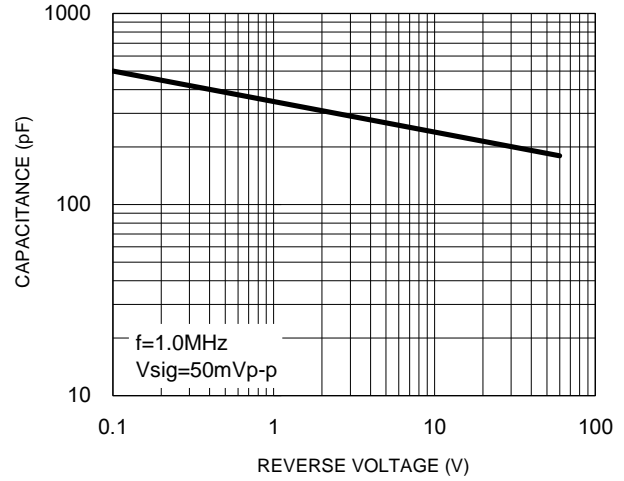


Fig.3 Typical Reverse Characteristics

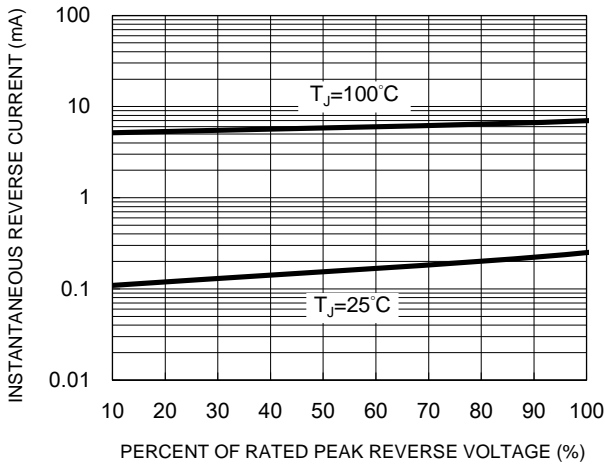


Fig.4 Typical Forward Characteristics

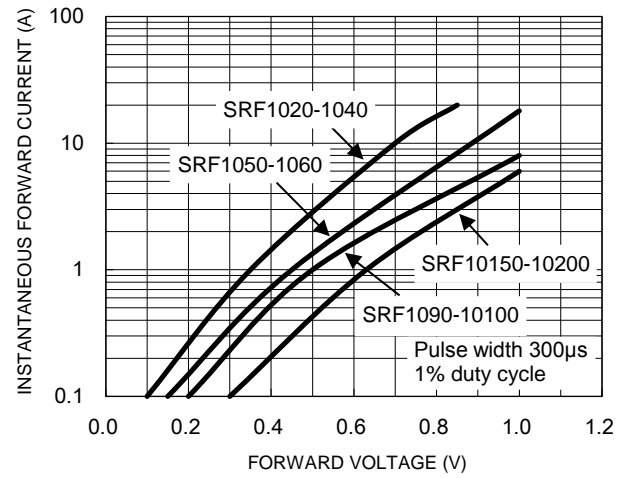
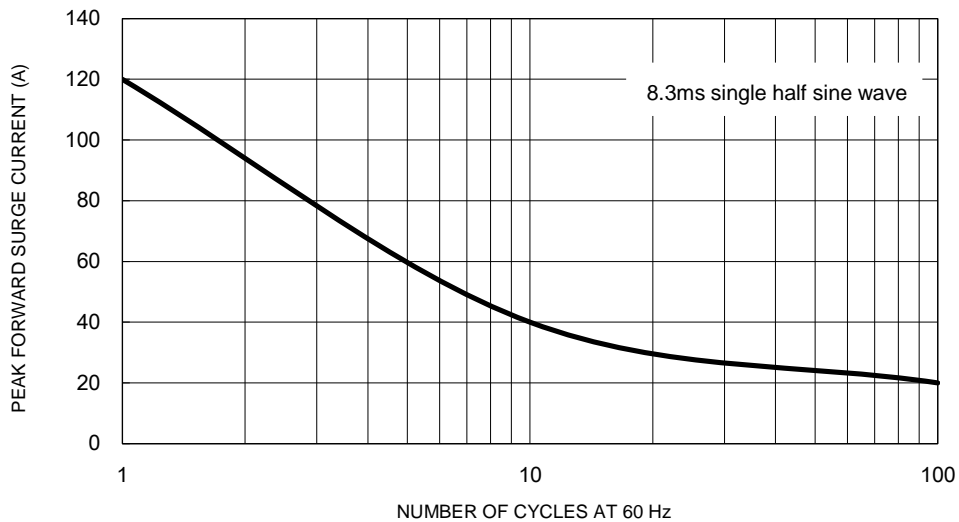


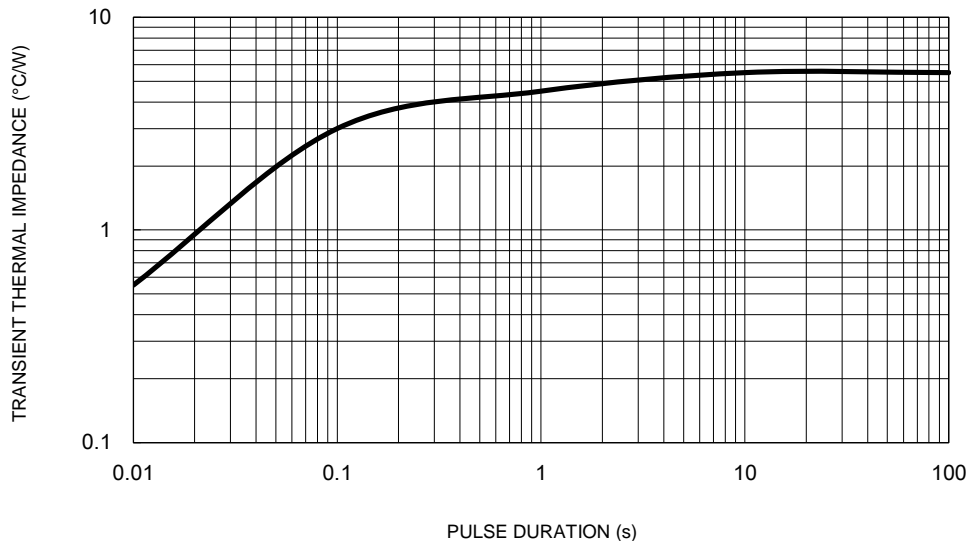
Fig.5 Maximum Non-Repetitive Forward Surge Current



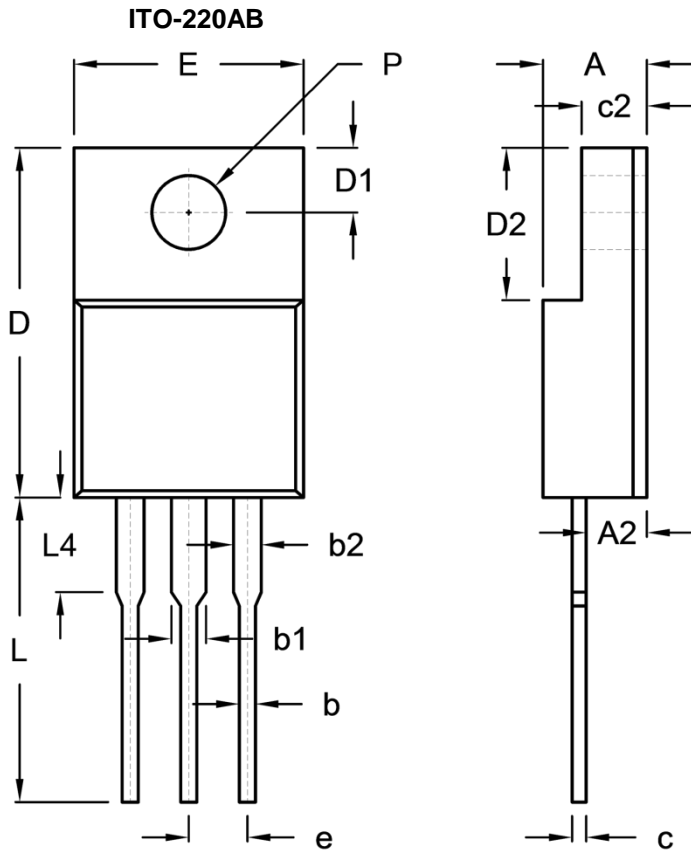
CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.6 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A2	2.30	2.96	0.091	0.117
b	0.50	0.90	0.020	0.035
b1	-	1.80	-	0.071
b2	0.95	1.45	0.037	0.057
c	0.46	0.76	0.018	0.030
c2	2.50	3.16	0.098	0.124
D	14.80	15.50	0.583	0.610
D1	2.40	3.20	0.094	0.126
D2	6.30	6.90	0.248	0.272
E	9.60	10.30	0.378	0.406
e	2.41	2.67	0.095	0.105
L	12.60	13.80	0.496	0.543
L4	-	4.10	-	0.161
P	3.00	3.40	0.118	0.134

MARKING DIAGRAM



- P/N = Marking Code
- G = Green Compound
- YWW = Date Code
- F = Factory Code

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