16A, 20V - 150V 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

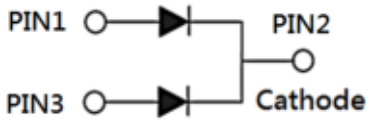
MECHANICAL DATA

- 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	16	A
V_{RRM}	20 - 150	V
I_{FSM}	200	A
$T_{J\ MAX}$	125, 150	°C
Package	ITO-220AB	
Configuration	Dual dies	



ITO-220AB



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	SRF 1620	SRF 1630	SRF 1640	SRF 1650	SRF 1660	SRF 1690	SRF 16100	SRF 16150	UNIT
Marking code on the device		SRF 1620	SRF 1630	SRF 1640	SRF 1650	SRF 1660	SRF 1690	SRF 16100	SRF 16150	
Repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	90	100	150	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	35	42	63	70	105	V
Forward current	I_F	16								A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	200								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	SRF1620 SRF1630 SRF1640 SRF1650 SRF1660	$R_{\Theta JC}$	2.5	°C/W
	SRF1690 SRF16100 SRF16150		4.0	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode(1)	SRF1620 SRF1630 SRF1640	I_F = 8A, T_J = 25°C	V_F	-	0.55	V
	SRF1650 SRF1660			-	0.70	V
	SRF1690 SRF16100			-	0.90	V
	SRF16150			-	1.00	V
Reverse current @ rated V_R per diode(2)	SRF1620 SRF1630 SRF1640 SRF1650 SRF1660	T_J = 25°C	I_R	-	500	µA
	SRF1690 SRF16100 SRF16150			-	100	µA
Reverse current @ rated V_R per diode (2)	SRF1620 SRF1630 SRF1640	T_J = 100°C	I_R	-	15	mA
	SRF1650 SRF1660			-	10	mA
	SRF1690 SRF16100 SRF16150			-	-	mA
Reverse current @ rated V_R per diode(2)	SRF1620 SRF1630 SRF1640 SRF1650 SRF1660	T_J = 125°C	I_R	-	-	mA
	SRF1690 SRF16100 SRF16150			-	5	mA

Notes:

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

ORDERING INFORMATION		
ORDERING CODE[1][2]	**PACKAGE**	**PACKING**
SRF16x	ITO-220AB	50 / Tube
SRF16xH	ITO-220AB	50 / Tube

Notes:

1. "x" defines voltage from 20V(SRF1620) to 150V(SRF16150)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

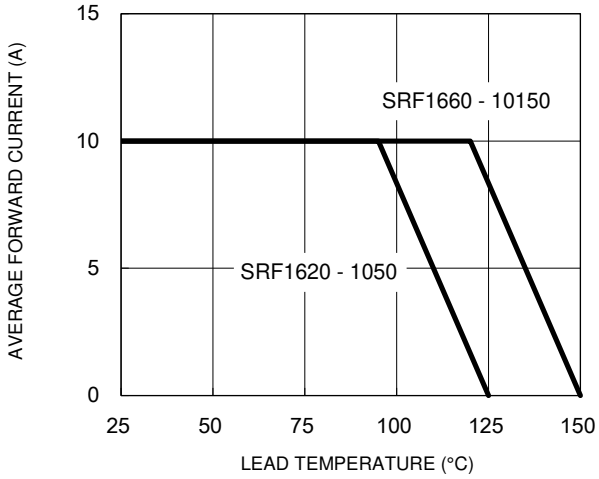


Fig.2 Typical Junction Capacitance

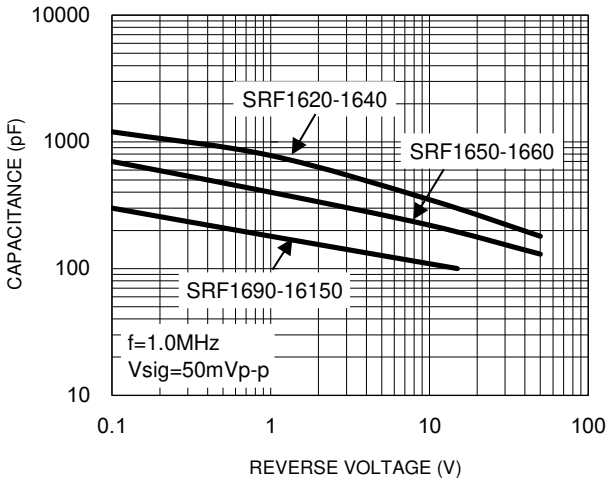


Fig.3 Typical Reverse Characteristics

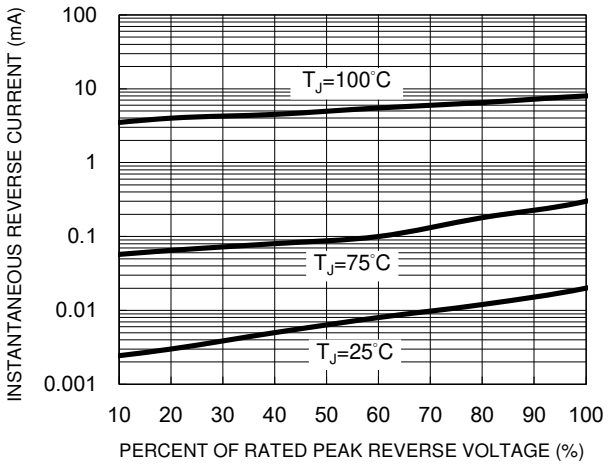


Fig.4 Typical Forward Characteristics

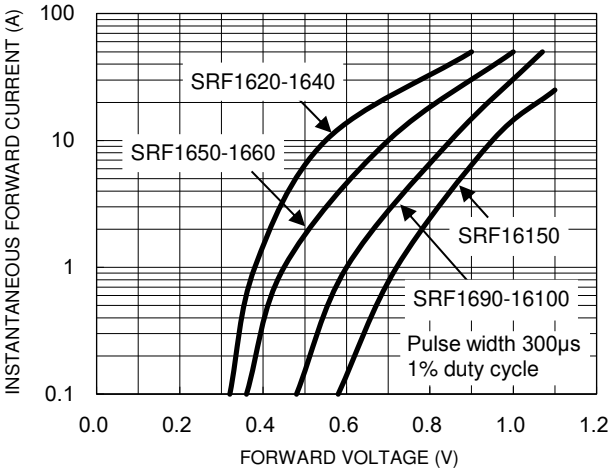
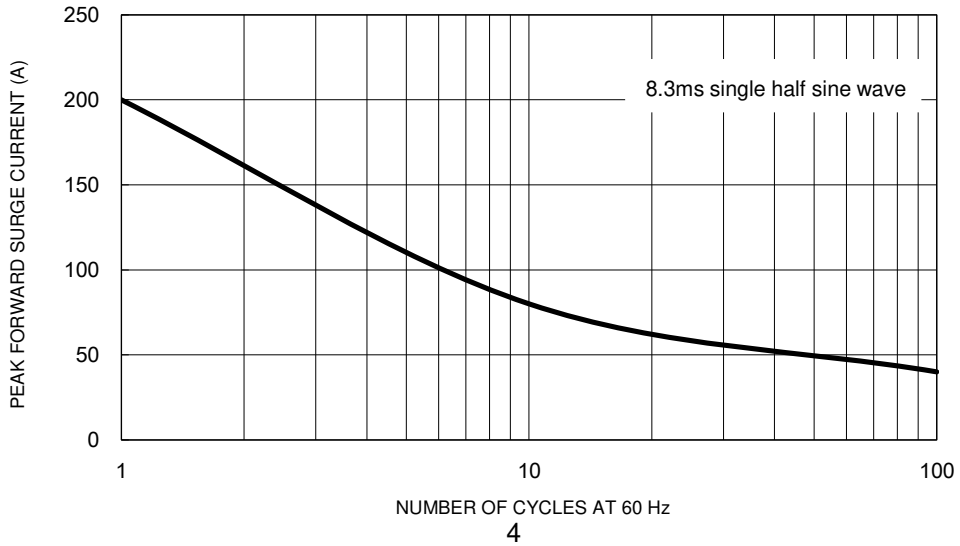


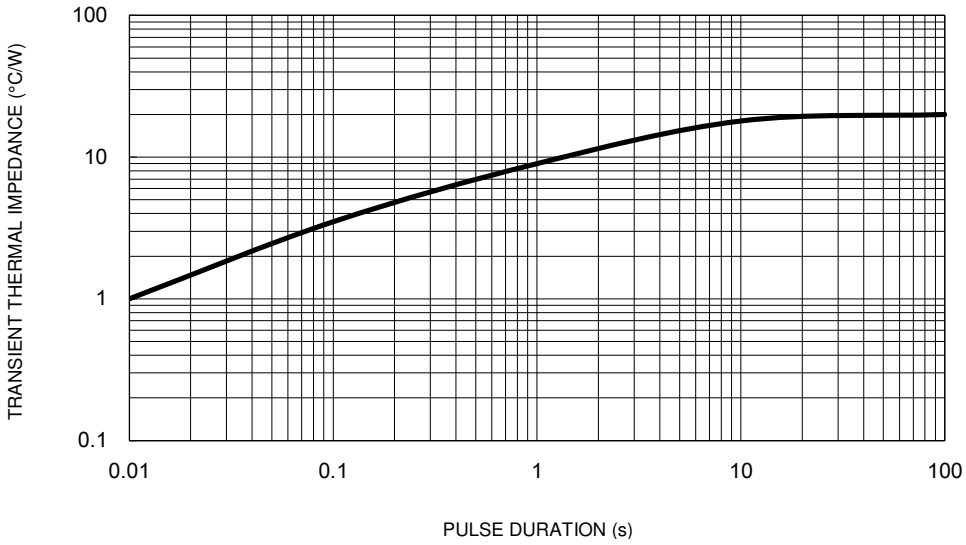
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

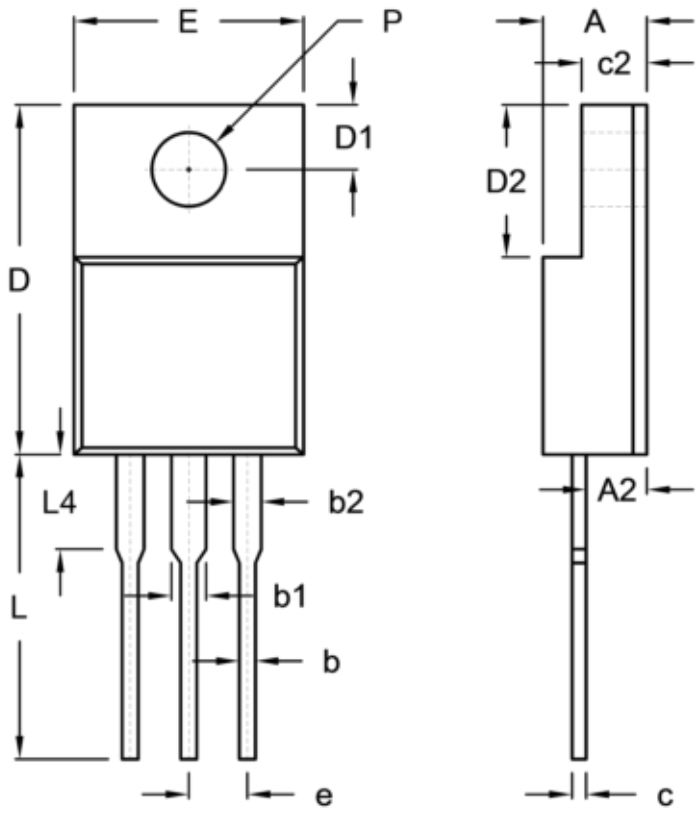
(T_A = 25°C unless otherwise noted)

Fig.6 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS

ITO-220AB



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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