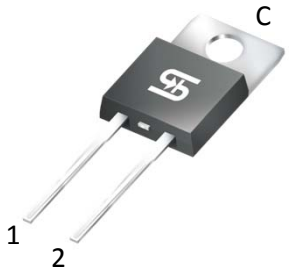
8A, 1200V Super Fast Power Rectifier

FEATURES

- Super Fast, Soft Recovery characteristics
- High junction temperature up to 175°C
- Negligible leakage sustain the high operation temperature
- Very low stored charge and its soft recovery minimize ringing and electrical noise to reduce power loss in associated MOSFET or IGBT
- High capability for high dI/dt operation.
- High surge current capability
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



TO-220AC

Pb-Free

RoHS COMPLIANT

TYPICAL APPLICATIONS

The UGA8120 is an ideal solution for being used as freewheeling diodes, featuring extremely low peak recovery current to significantly reduce snubbing, and lowering switching losses in IGBT / MOSFET.
It is especially suited for heavy duty applications with demanding long term reliability such as inverters, uninterrupted power supplies, motor drives and other mission-critical systems, where high frequency and high efficiency is being needed.
Another competitive advantage of this device is the negligible leakage for use in high temperature environment.

MECHANICAL DATA

Case: TO-220AC

Molding compound, UL flammability classification rating 94V-0

Part no. with suffix "H" means AEC-Q101 qualified

Packing code with suffix "G" means green compound (halogen-free)

Terminal: Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 2 whisker test

Polarity: As marked

Mounting torque: 0.56 Nm maximum

Weight: 1.85g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	UGA8120		UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	1200		V
Maximum average forward rectified current	$I_{F(AV)}$	8		A
Non-repetitive peak forward surge current 8.3ms single sine-wave	I_{FSM}	80		A
Maximum instantaneous forward voltage (Note 1) I_F= 8 A	V_F	2.8		V
Maximum reverse current @ Rated VR	I_R	TYP	MAX	
T_J=25 °C		1	5	μA
T_J=125 °C		5	100	
Reverse Recovery Time	t_{rr}	TYP	MAX	
T_J=25°C, I_F=0.5A, I_R=1A, I_{RR}=0.25A		35	50	ns
T_J=25°C, I_F=1A, dI_F/dt= -100A/μs, V_R=30V		50	70	
Reverse Recovery Charges		TYP	MAX	
T_J=25°C, I_F=8A, dI_F/dt= -200A/μs, V_R=400V	Q_{rr}	165	-	nC
T_J=125°C, I_F=8A, dI_F/dt= -200A/μs, V_R=400V	I_{RM}	11	16	A
Typical thermal resistance	$R_{\theta JC}$	2.3		°C/W
Operating junction temperature range	T_J	- 55 to +175		°C
Storage temperature range	T_{STG}	- 55 to +175		°C

Note 1: Pulse test with PW=300μs, 1% duty cycle

ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX (*)	PACKAGE	PACKING
UGA8120	H	C0	G	TO-220AC	50 / Tube

*: Optional available

EXAMPLE					
EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
UGA8120HC0G	UGA8120	H	C0	G	AEC-Q101 qualified Green compound

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

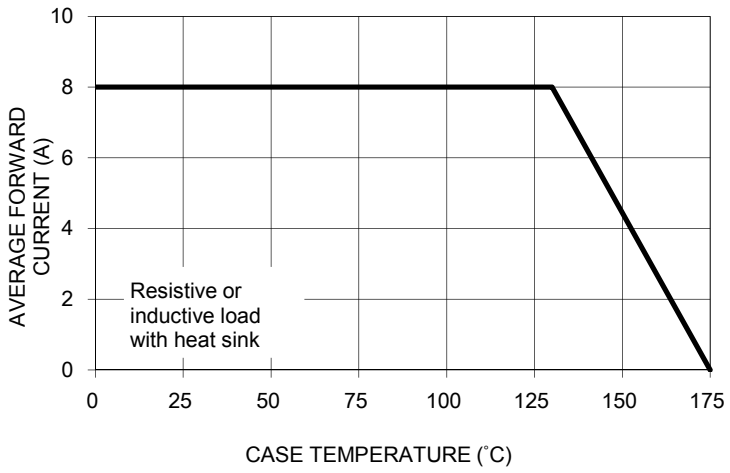


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

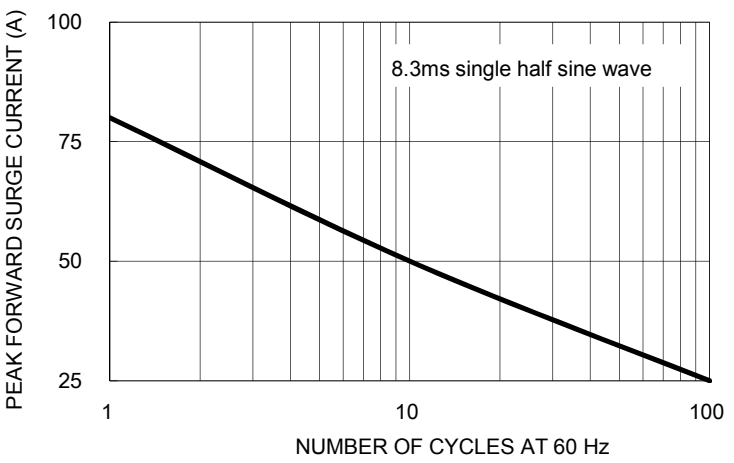


FIG. 3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

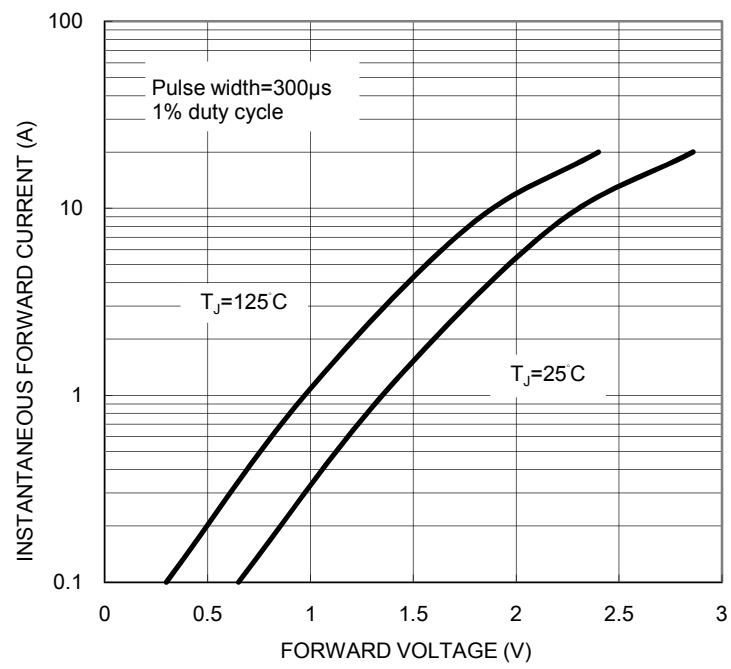


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

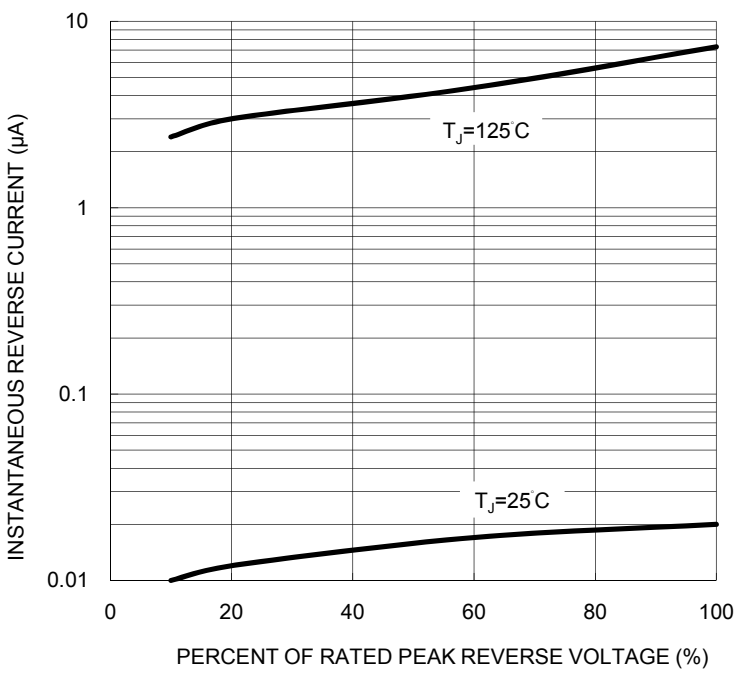
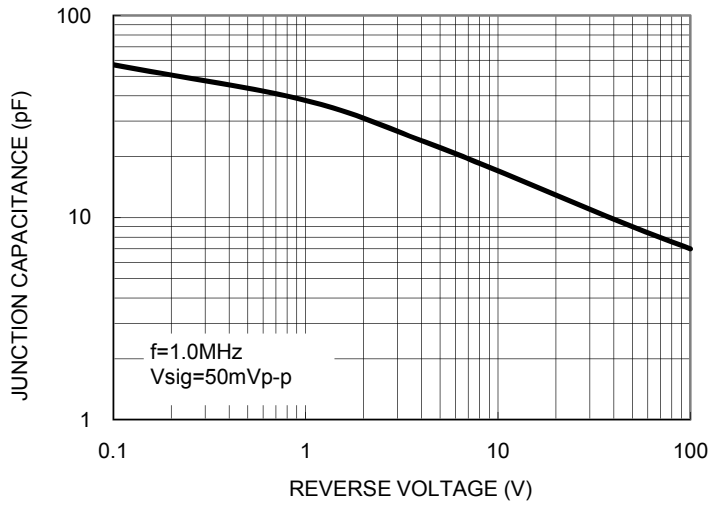
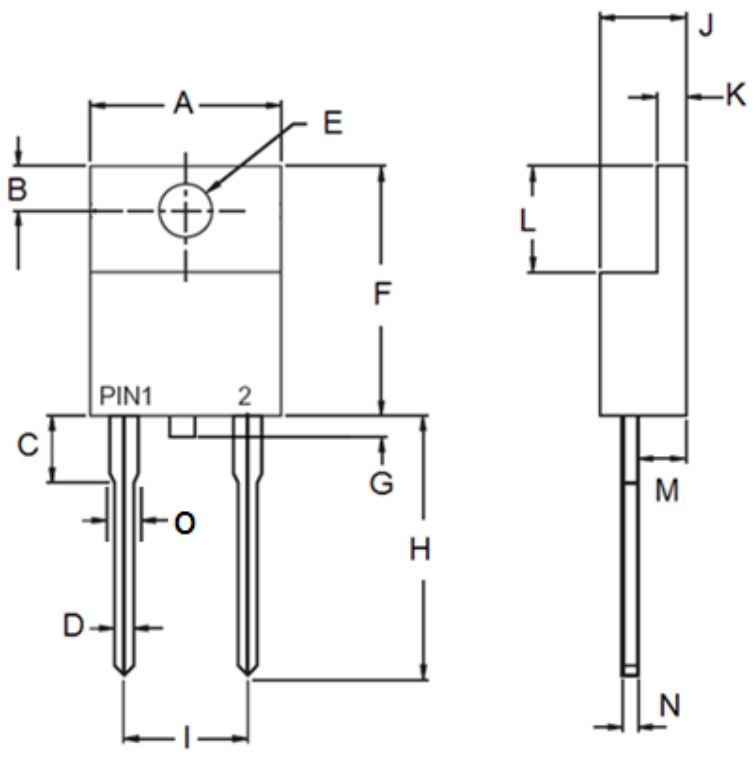


FIG. 5 TYPICAL JUNCTION CAPACITANCE



PACKAGE OUTLINE DIMENSIONS

TO-220AC



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	-	10.50	-	0.413
B	2.62	3.44	0.103	0.135
C	2.80	4.20	0.110	0.165
D	0.68	0.94	0.027	0.037
E	3.54	4.00	0.139	0.157
F	14.60	16.00	0.575	0.630
G	0.00	1.60	0.000	0.063
H	13.19	14.79	0.519	0.582
I	4.95	5.20	0.195	0.205
J	4.42	4.76	0.174	0.187
K	1.14	1.40	0.045	0.055
L	5.84	6.86	0.230	0.270
M	2.20	2.80	0.087	0.110
N	0.35	0.64	0.014	0.025
O	1.14	1.77	0.045	0.070

MARKING DIAGRAM

P/N = Specific Device Code
G = Green Compound
YWW = Date Code
F = Factory Code

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