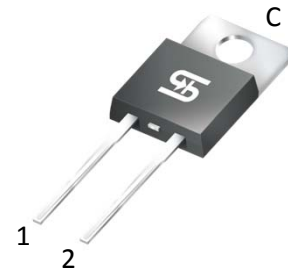


8A, 1200V Super Fast Power Rectifier

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


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 T _J =25 °C T _J =125 °C	I _R	TYP	MAX	μA
		1	5	
		5	100	
Reverse Recovery Time T _J =25°C, I _F =0.5A, I _R =1A, I _{RR} =0.25A T _J =25°C, I _F =1A, di _F /dt= -100A/μs, V _R =30V	t _{rr}	TYP	MAX	ns
		35	50	
		50	70	
Reverse Recovery Charges T _J =25°C, I _F =8A, di _F /dt= -200A/μs, V _R =400V T _J =125°C, I _F =8A, di _F /dt= -200A/μs, V _R =400V	Q _{rr}	165	-	nC
	I _{RM}	11	16	A
Typical thermal resistance	R _{θJC}	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

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

FIG.1 FORWARD CURRENT DERATING CURVE

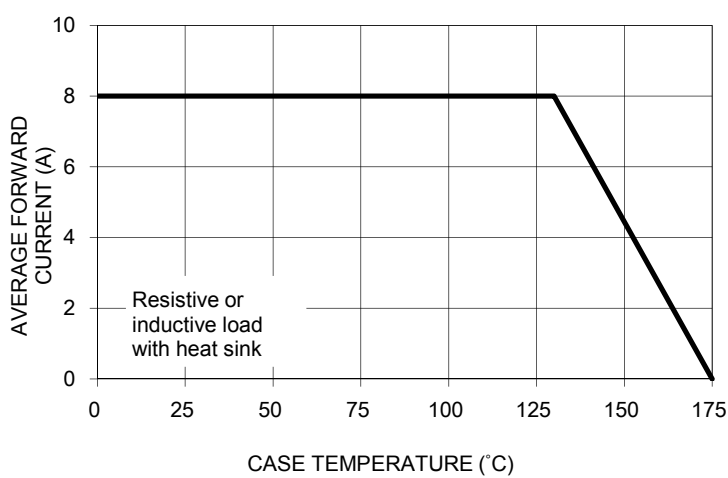


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

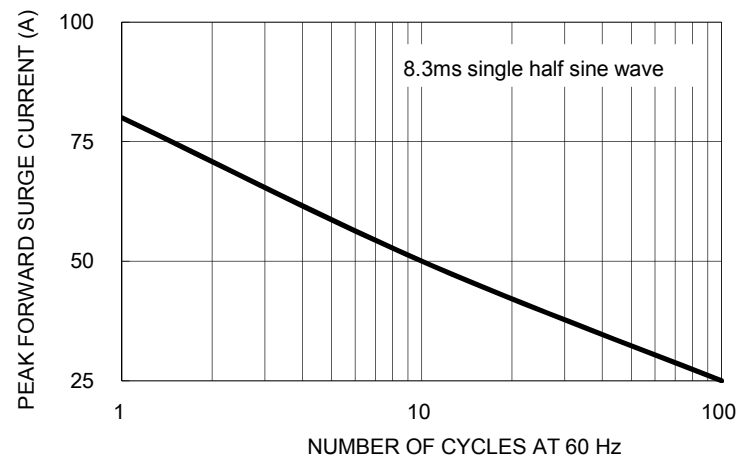


FIG. 3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

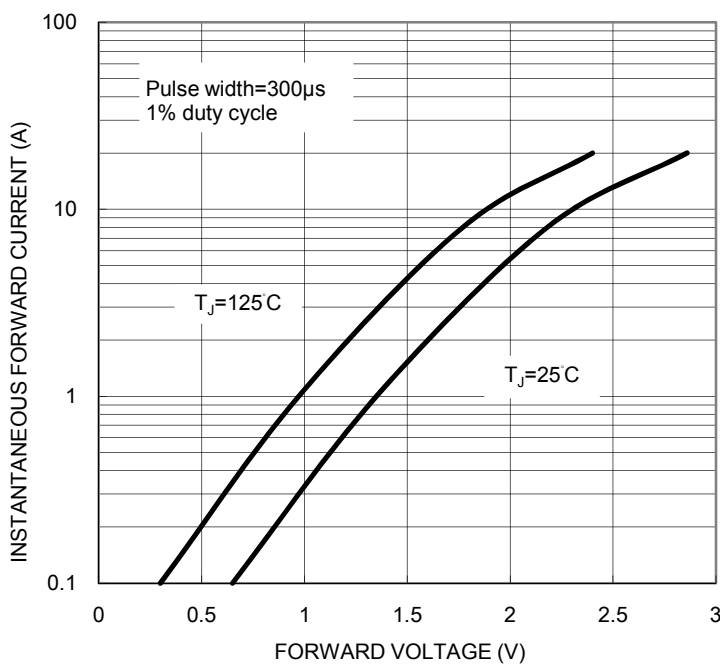


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

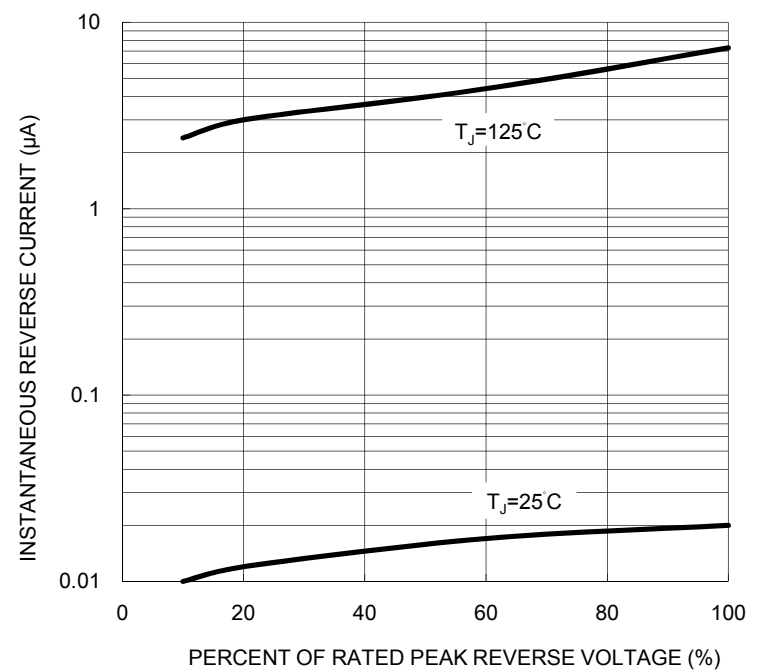
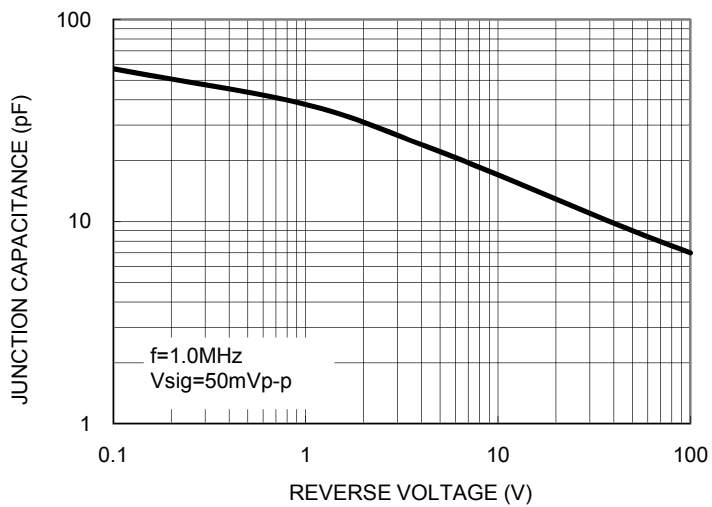
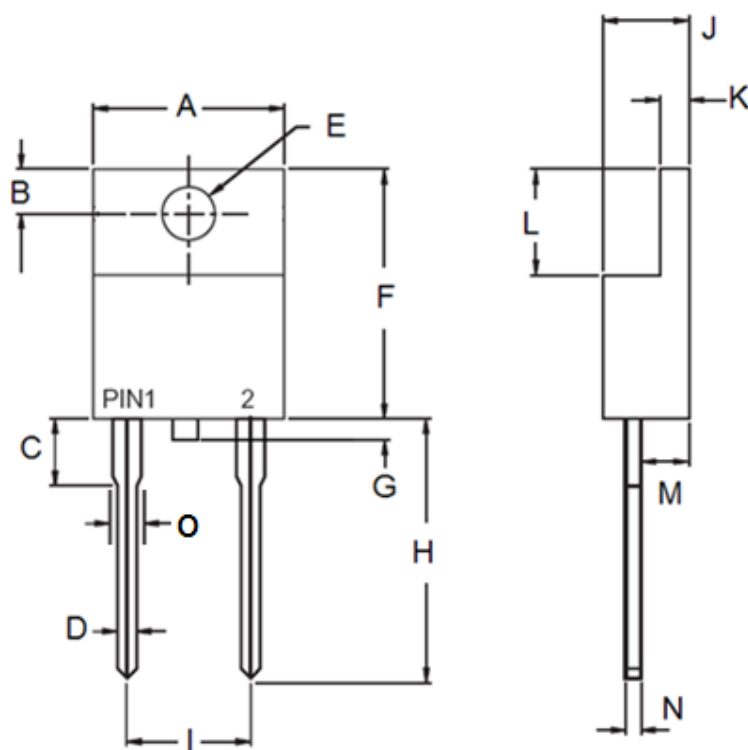


FIG. 5 TYPICAL JUNCTION CAPACITANCE

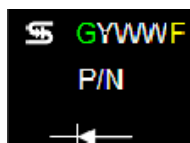


PACKAGE OUTLINE DIMENSIONS
TO-220AC



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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