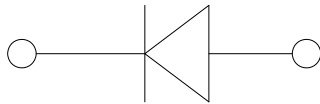
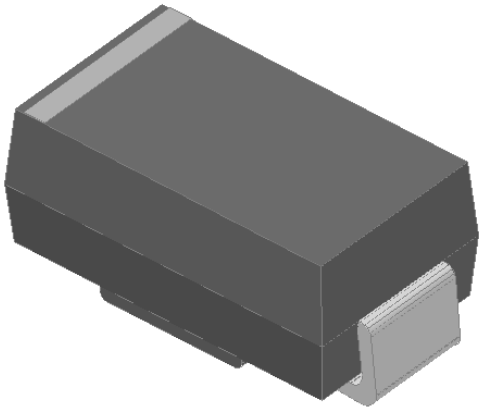


Surface Mount Ultra Fast Recovery Rectifier



Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Part no. with suffix "Q" means AEC-Q101 qualified

Typical Applications

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, automotive and telecommunication.

Mechanical Data

- **Package:** DO-214AC (SMA)
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■ Maximum Ratings ($T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	UG2AAQ	UG2BAQ	UG2CAQ	UG2DAQ
Device marking code			UG2AA	UG2BA	UG2CA	UG2DA
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	V	50	100	150	200
Maximum RMS Voltage	V_{RMS}	V	35	70	105	140
Maximum DC blocking Voltage	V_{DC}	V	50	100	150	200
Average rectified output current @60Hz sine wave, resistance load, T_L (Fig.1)	I_O	A	2.0			
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, $T_J=25^\circ\text{C}$	I_{FSM}	A	50			
Current squared time @1ms≤t≤8.3ms $T_J=25^\circ\text{C}$	I^2t	A ² s	10.375			
Storage temperature	T_{stg}	°C	-55 ~ +150			
Junction temperature	T_J	°C	-55 ~ +150			



UG2AAQ THRU UG2DAQ

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	UG2AAQ	UG2BAQ	UG2CAQ	UG2DAQ
Maximum instantaneous forward voltage	V _F	V	I _F =2.0A	0.92			
Maximum reverse recovery time	T _{RR}	ns	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	25			
Maximum DC reverse current at rated DC blocking voltage per diode @ V _{RM} =V _{RRM}	I _R	μA	T _J =25°C	2			
			T _J =125°C	20			
Typical junction capacitance	C _J	pF	V _R =4V, f=1MHz	25			

■ Dynamic Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		UG2AAQ	UG2BAQ	UG2CAQ	UG2DAQ
Typical reverse Recovery Time	T _{RR}	ns	T _J =25°C	I _F =1A, di/dt=-50A/us V _{RM} =30V	26			
			T _J =25°C	I _F =2A di/dt=-200A/us V _{RM} =100V	25			
			T _J =125°C		30			
Typical peak recovery current	I _{RRM}	A	T _J =25°C	I _F =2A di/dt=-200A/us V _{RM} =100V	3.5			
			T _J =125°C		6			
Typical reverse recovery charge	Q _{rr}	nC	T _J =25°C	I _F =2A di/dt=-200A/us V _{RM} =100V	47			
			T _J =125°C		85			
Minimum non-repetitive avalanche energy	EAS	mJ	T _J =25°C	I _R =1.8 A, L=15 mH	24.3			

■ Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	UG2AAQ	UG2BAQ	UG2CAQ	UG2DAQ
Typical Thermal resistance	R _{θJ-A(1)}	°C/W	75			
	R _{θJ-L(1)}		20			

Note:
 (1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5 mm x5 mm) copper pad areas



UG2AAQ THRU UG2DAQ

■ Characteristics (Typical)

Fig.1:Forward Current Derating Curve

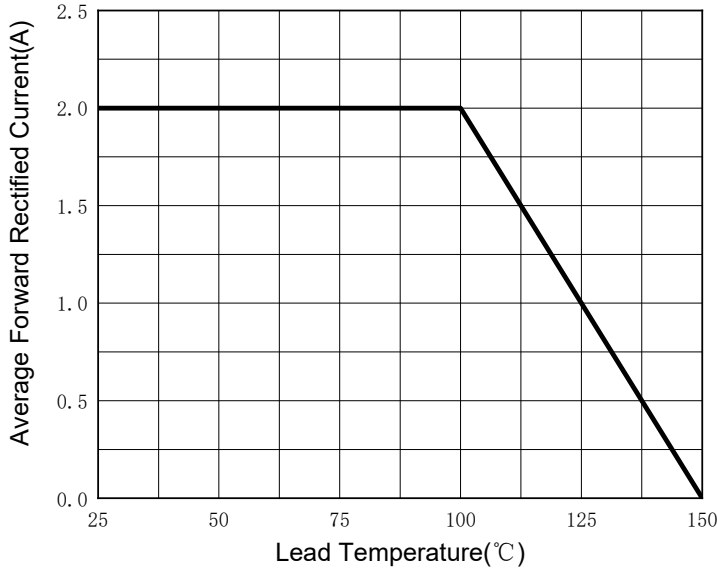


Fig.2:Maximum Non-Repetitive Peak Forward Surge Current

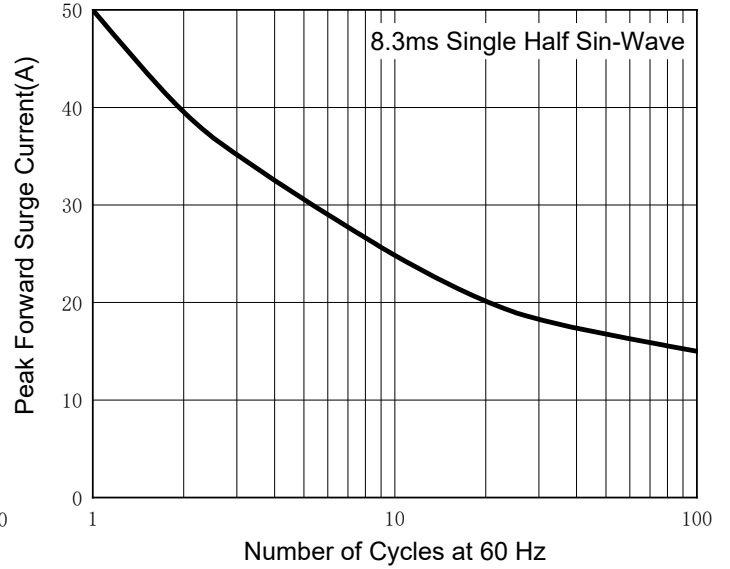


Fig.3:Typical Instantaneous Forward Characteristics

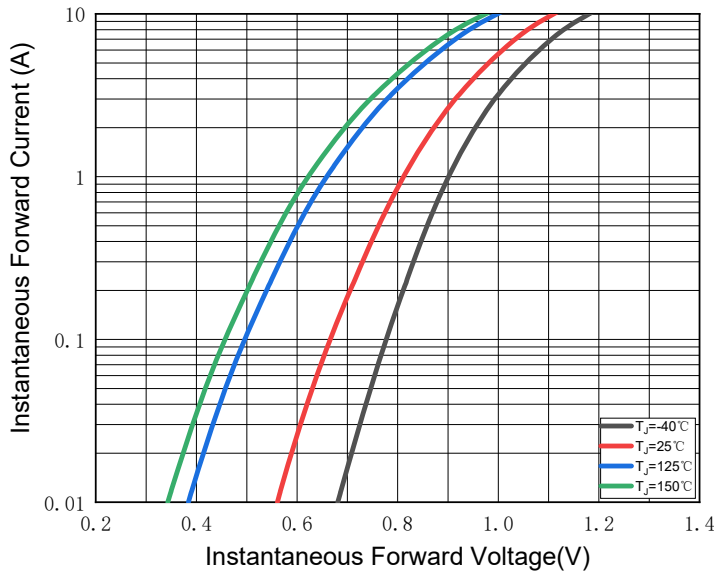


Fig.4:Typical Reverse Leakage Characteristics

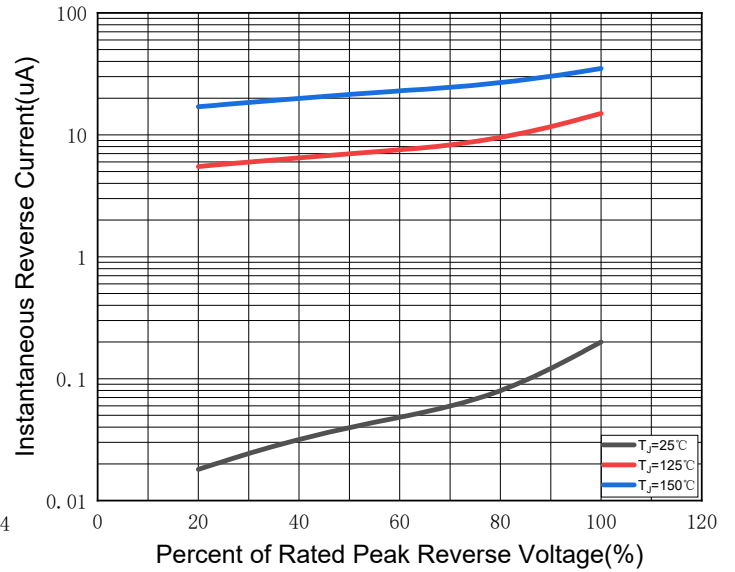
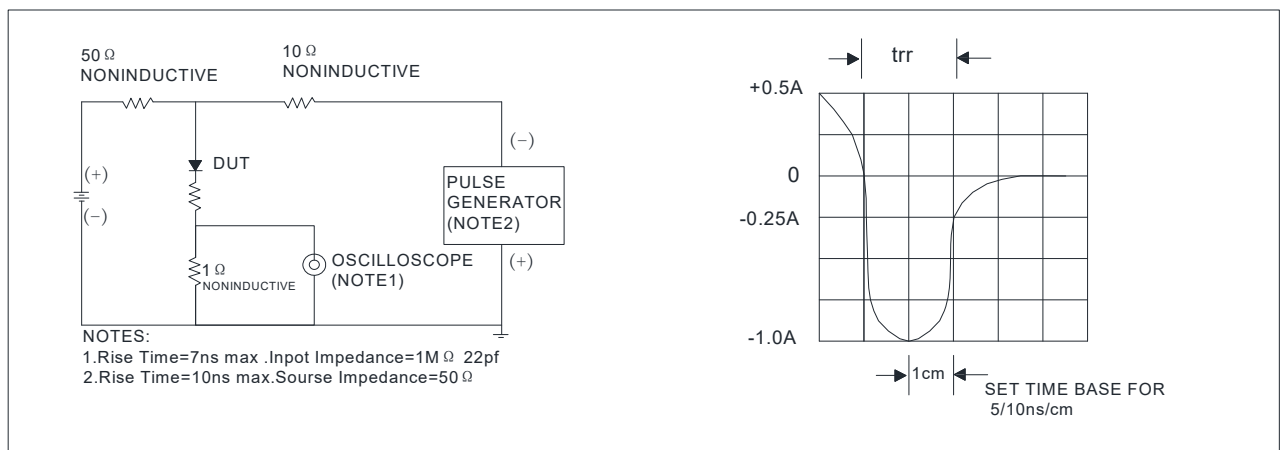


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



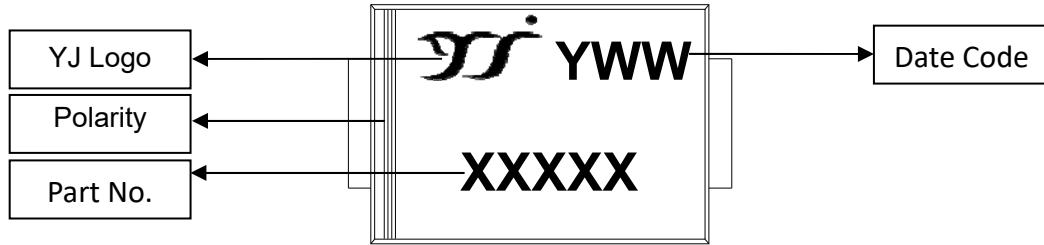


UG2AAQ THRU UG2DAQ

■ Ordering Information (Example)

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
UG2AAQ-UG2DAQ	F2	Approximate 0.067	7500	120000	13" reel

■ Marking Information



Note:

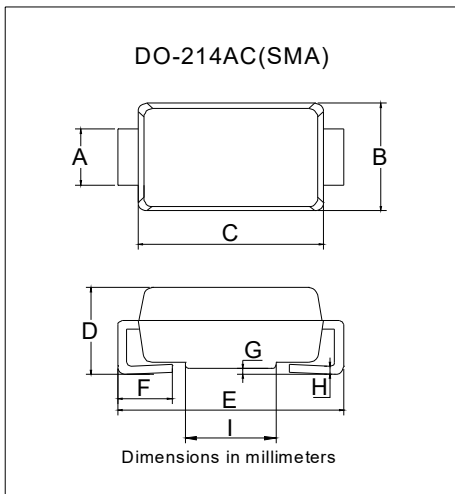
- All marking is at middle of the product body
- All marking is in laser printing
- XXXXX is marking code, like UG2DAQ marking code is UG2DA
- Body color: Black
- YWW is date code, "Y" is year. "WW" is week.

For instance:

The 17th week of 2021, date code is 117

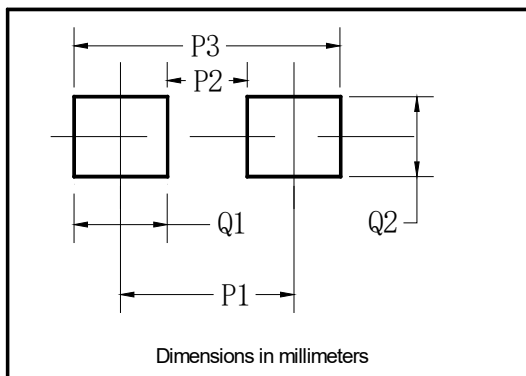
The 17th week of 2022, date code is 217

■ Outline Dimensions



DO-214AC(SMA)		
Dim	Min	Max
A	1.25	1.58
B	2.40	2.83
C	4.00	4.75
D	1.90	2.30
E	4.93	5.28
F	0.76	1.41
G	0.05	0.20
H	0.15	0.31
I	1.7	2.1

■ Suggested Pad Layout



DO-214AC(SMA)	
Dim	Millimeters
P1	4.00
P2	1.50
P3	6.50
Q1	2.50
Q2	1.70



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