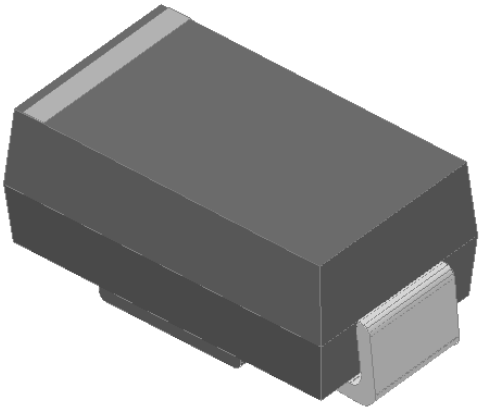
Surface Mount Super Fast Recovery Rectifier

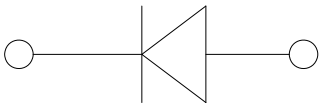


Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Super Fast reverse recovery time
- 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 high frequency 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 (Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	MURS160Q
Device marking code			MURS160
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	V	600
Maximum RMS Voltage	V_{RMS}	V	420
Maximum DC blocking Voltage	V_{DC}	V	600
Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1)	I_O	A	1.0
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, Tj=25℃	I_{FSM}	A	30
Current squared time @1ms≤t≤8.3ms Tj=25℃	I^2t	A^2s	3.735
Storage temperature	T_{stg}	℃	-55 ~ +175
Junction temperature	Tj	℃	-55 ~ +175

■Electrical Characteristics（Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MURS160Q
Maximum instantaneous forward voltage	V_F	V	I_{FM}=1.0A	1.25
Maximum reverse recovery time	T_{RR}	ns	I_F=0.5A,I_R=1.0A, I_{rr}=0.25A	50
Maximum DC reverse current at rated DC blocking voltage	I_R	μA	Tj =25℃	5
			Tj =125℃	50
Typical junction capacitance	Cj	pF	VR=4V,f=1MHz	12

■Dynamic Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	Tj=25℃	I_F=1A，di/dt=-50A/us V_{RM}=30V	-	47	-
			Tj=25℃	I_F=1A di/dt=-200A/us V_{RM}=100V	-	30	-
			Tj=125℃		-	54	-
Peak recovery current	I_{RRM}	A	Tj=25℃		-	3.7	-
			Tj=125℃		-	5.2	-
Reverse recovery charge	Qrr	nC	Tj=25℃		-	55	-
			Tj=125℃		-	139	-
Non-repetitive avalanche energy	E_{AS}	mJ	Tj=25℃	IR=0.5A，L=15 mH	-	1.9	-

■Thermal Characteristics （Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	MURS160Q
Typical Thermal resistance	$R_{\theta J-A}$(1)	℃/W	85
	$R_{\theta J-L}$(1)		25

Note:
(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

■ Characteristics (Typical)

Fig.1:Forward Current Derating Curve

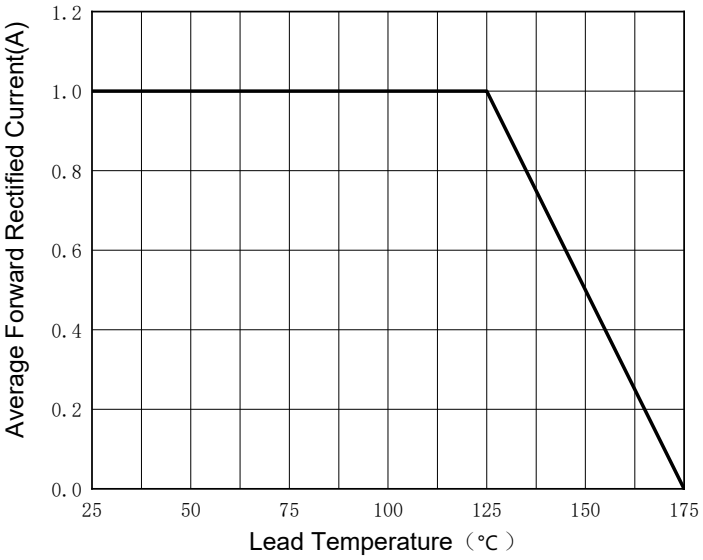


Fig.2:Surge Forward Current Capability

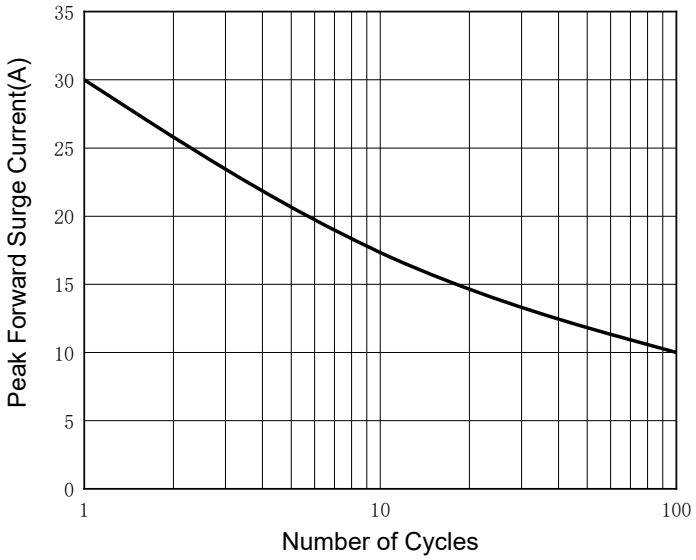


Fig.3:Typical Forward Characteristics

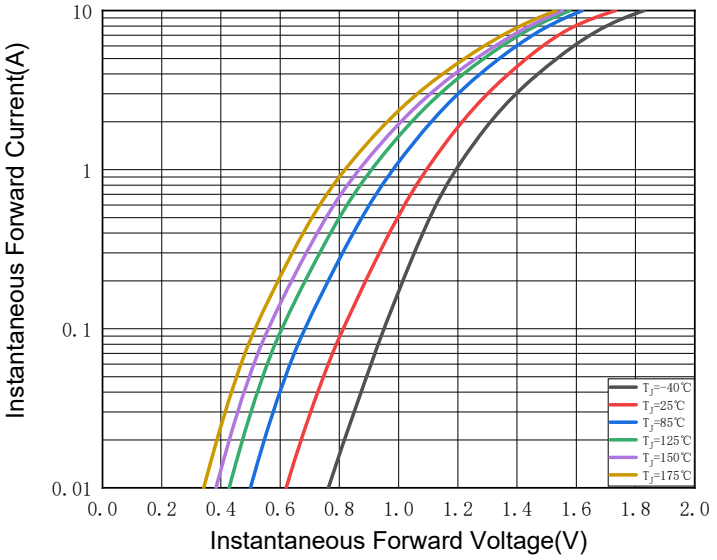


Fig.4:Typical Reverse Characteristics

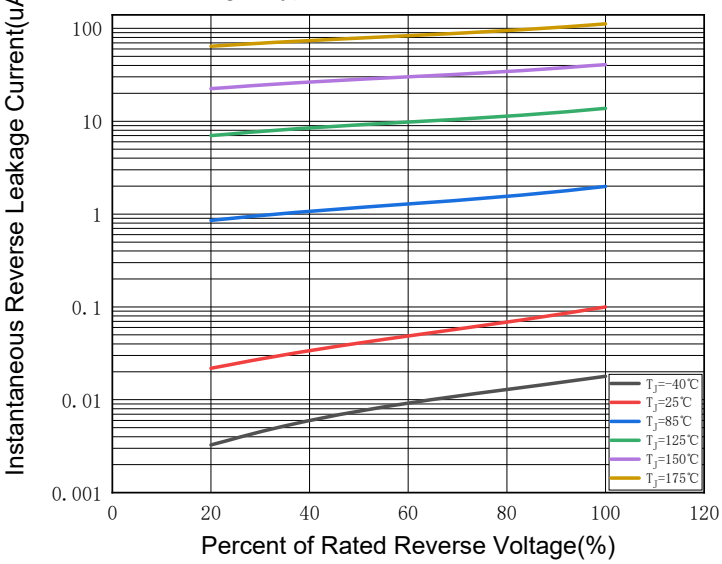
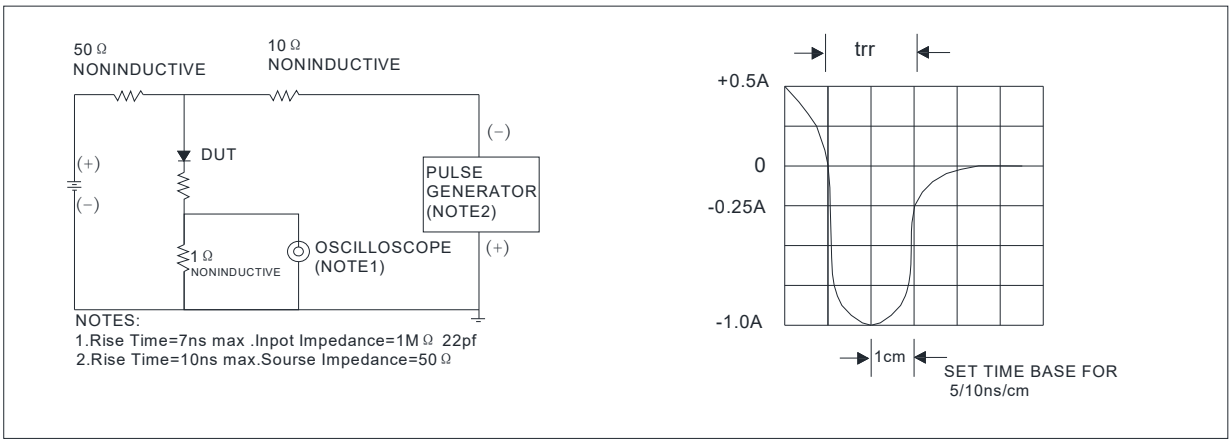


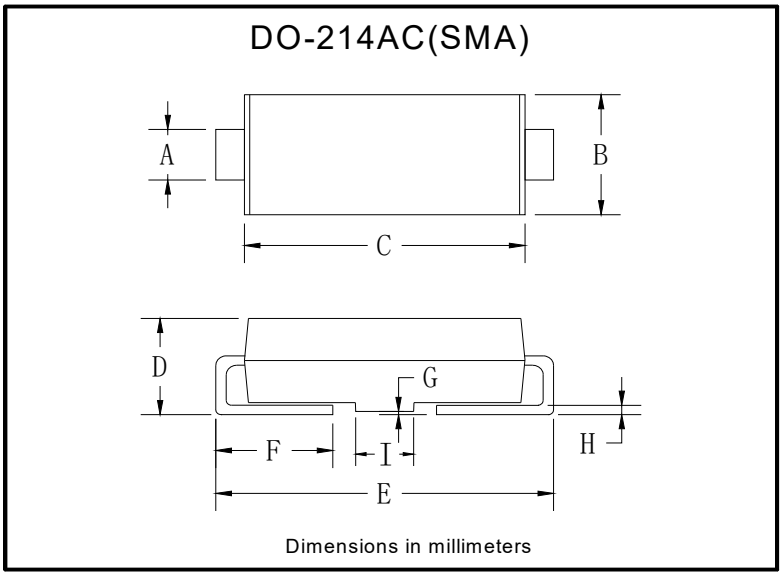
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■Ordering Information (Example)

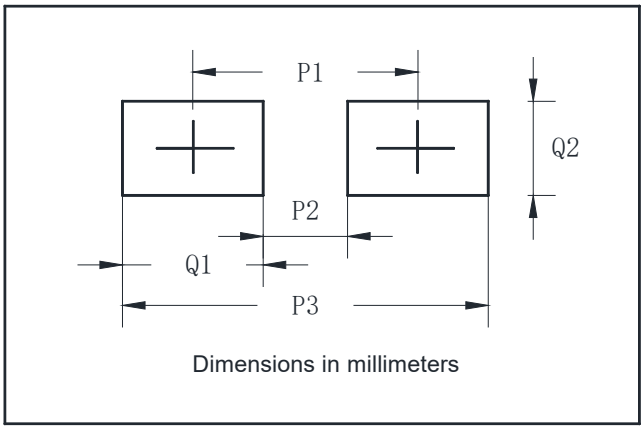
PREFERED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MURS160Q	F2	Approximate 0.067	7500	120000	13” reel

■ 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	1.70	2.10

■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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