

■ FEATURES

- Ultrafast reverse recovery time
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Glass passivated chip junction
- Solder dip 275 °C max. 7 s, per JESD 22-B106

■ TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

■ MECHANICAL DATA

- **Package:** DO-204AL(DO-41)
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Color band denotes the cathode end

■ MAXIMUM RATINGS (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MUR120	MUR140	MUR160
Device marking code			MUR120	MUR140	MUR160
Maximum Repetitive Peak Reverse Voltage	VRRM	V	200	400	600
Maximum RMS Voltage	VRMS	V	140	280	420
Maximum DC blocking Voltage	VDC	V	200	400	600
Average Forward Current @60Hz sine wave, Resistance load, T _a =75°C	I _{F(AV)}	A	1.0		
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T _j =25°C	I _{FSM}	A	35		
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T _j =25°C			70		
Current squared time @1ms≤t≤8.3ms T _j =25°C, Rating of per diode	I ² t	A ² s	5		
Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	C _j	pF	17	16	
Storage Temperature	T _{stg}	°C	-55 ~ +150		
Junction Temperature	T _j	°C	-55 ~ +150		

■ ELECTRICAL CHARACTERISTICS (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MUR120	MUR140	MUR160
Maximum instantaneous forward voltage drop per diode	V _F	V	I _{FM} =1.0A	0.875	1.25	
Maximum DC reverse current at rated DC blocking voltage per diode	I _R	μA	T _j =25°C	2.5		
			T _j =125°C	100		
Maximum reverse recovery time	t _{rr}	ns	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	25	50	

■ DYNAMIC CHARACTERISTICS

■ MUR120

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$, $di/dt=-50\text{A/us}$ $V_{RM}=30\text{V}$	-	26	-
			$T_j=25^\circ\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=100\text{V}$	-	21	-
			$T_j=125^\circ\text{C}$		-	23	-
Peak recovery current	I_{RRM}	A	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=100\text{V}$	-	2.6	-
			$T_j=125^\circ\text{C}$		-	3.9	-
Reverse recovery charge	Q_{rr}	nC	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=100\text{V}$	-	26.8	-
			$T_j=125^\circ\text{C}$		-	44.9	-
Non-repetitive avalanche energy	E_{AS}	mJ	$T_j=25^\circ\text{C}$	$I_R=1.6\text{A}$, $L=15\text{mH}$	19.2	-	-

■ MUR140 THROUGH MUR160

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$, $di/dt=-50\text{A/us}$ $V_{RM}=30\text{V}$	-	46	-
			$T_j=25^\circ\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=400\text{V}$	-	36	-
			$T_j=125^\circ\text{C}$		-	56	-
Peak recovery current	I_{RRM}	A	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=400\text{V}$	-	3.6	-
			$T_j=125^\circ\text{C}$		-	5.2	-
Reverse recovery charge	Q_{rr}	nC	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=400\text{V}$	-	63.5	-
			$T_j=125^\circ\text{C}$		-	144.5	-
Non-repetitive avalanche energy	E_{AS}	mJ	$T_j=25^\circ\text{C}$	$I_R=1.3\text{A}$, $L=15\text{mH}$	12.7	-	-

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

PARAMETER	SYMBOL	UNIT	MUR120	MUR140	MUR160
Typical Thermal Resistance	$R_{\theta J-A}$	$^\circ\text{C/W}$	60		

■ PACKAGING INFORMATION

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR120~MUR160	D1	Approximate 0.30	5000	5000	50000	Tape
MUR120~MUR160	C1	Approximate 0.30	1000	1000	50000	Bulk

■ CHARACTERISTICS (TYPICAL)

FIG.1: I_o-T_a Curve

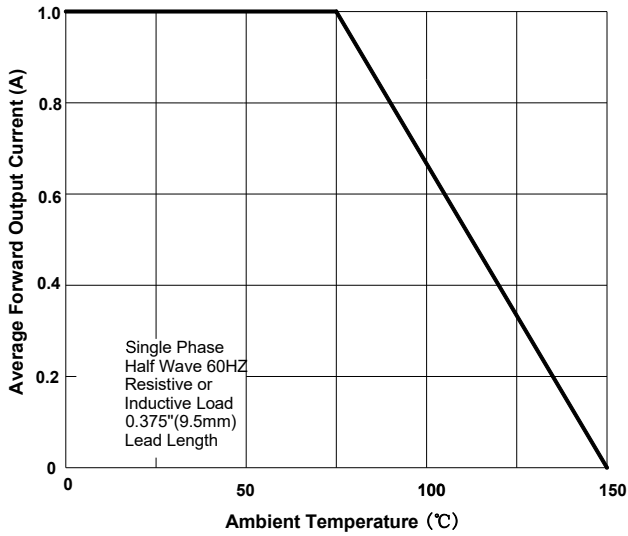


FIG.2: Forward Surge Current Capability

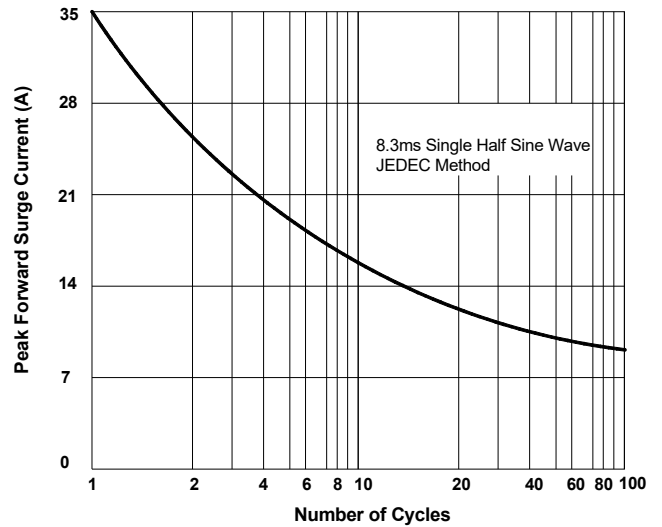


FIG.3: Forward Voltage

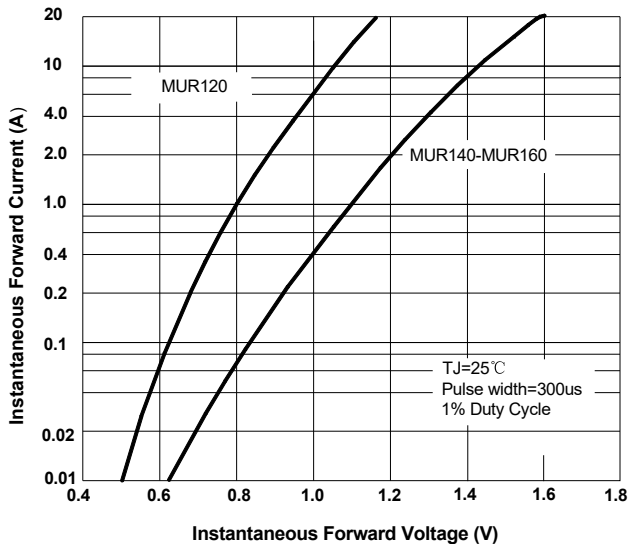


FIG.4: Typical Reverse Characteristics

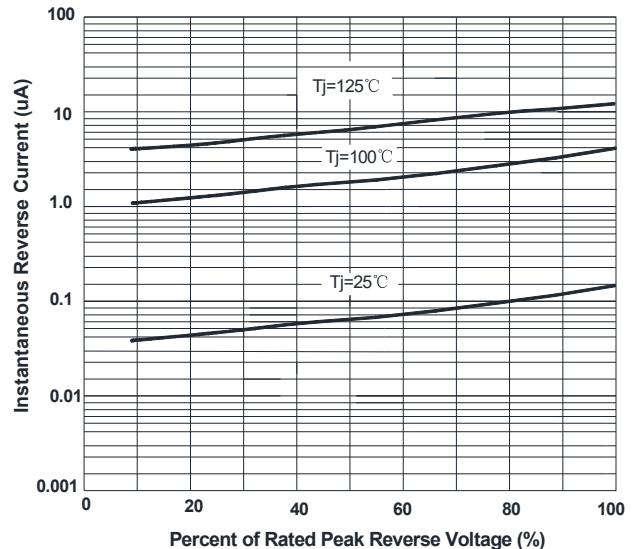
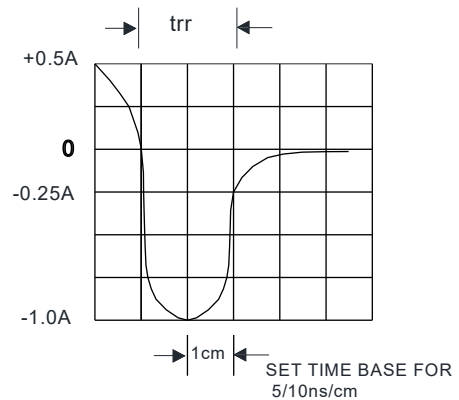
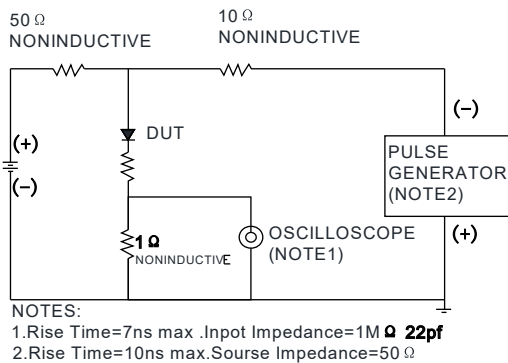
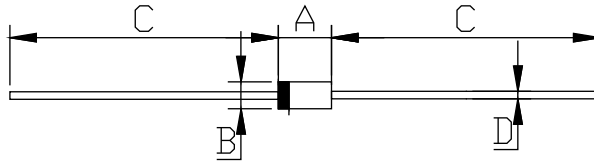


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■ **OUTLINE DIMENSIONS**

DO-204AL(DO-41)



Dimensions in millimeters

DO-204AL(DO-41)		
Dim	Min	Max
A	4.22	5.21
B	2.03	2.72
C	25.4	/
D	0.69	0.86