

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-201AD(DO-27)
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 (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MUR420	MUR440	MUR460	MUR480	MUR4100
Device marking code			MUR420	MUR440	MUR460	MUR480	MUR4100
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	V	200	400	600	800	1000
Maximum RMS Voltage	V _{RMS}	V	140	280	420	560	700
Maximum DC blocking Voltage	V _{DC}	V	200	400	600	800	1000
Average Forward Current @60Hz sine wave, Resistance load, Ta =50°C	I _{F(AV)}	A	4.0				
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, Tj=25°C	I _{FSM}	A	125				
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25°C			250				
Current squared time @1ms≤t≤8.3ms Tj=25°C, Rating of per diode	I ² t	A ² s	65				
Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	C _j	pF	60	51		45	50
Storage Temperature	T _{stg}	°C	-55 ~ +150				
Junction Temperature	T _j	°C	-55 ~ +150				

ELECTRICAL CHARACTERISTICS (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MUR420	MUR440	MUR460	MUR480	MUR4100
Maximum instantaneous forward voltage drop per diode	V _F	V	I _{FM} =4.0A	0.89		1.28		1.85
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		75

■ DYNAMIC CHARACTERISTICS
■ MUR420

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$, $di/dt=-50\text{A}/\mu\text{s}$ $V_{RM}=30\text{V}$	-	31	-
			$T_j=25^\circ\text{C}$	$I_F=4\text{A}$ $di/dt=-200\text{A}/\mu\text{s}$ $V_{RM}=100\text{V}$	-	23	-
			$T_j=125^\circ\text{C}$		-	39	-
Peak recovery current	I_{RRM}	A	$T_j=25^\circ\text{C}$	$I_F=4\text{A}$ $di/dt=-200\text{A}/\mu\text{s}$ $V_{RM}=100\text{V}$	-	4.1	-
			$T_j=125^\circ\text{C}$		-	7.0	-
Reverse recovery charge	Q _{rr}	nC	$T_j=25^\circ\text{C}$	$I_F=4\text{A}$ $di/dt=-200\text{A}/\mu\text{s}$ $V_{RM}=100\text{V}$	-	47.4	-
			$T_j=125^\circ\text{C}$		-	136.8	-
Non-repetitive avalanche energy	E _{AS}	mJ	$T_j=25^\circ\text{C}$	$I_R=2.4\text{A}$, $L=15\text{mH}$	43.2	-	-

■ MUR440 THROUGH MUR460

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$, $di/dt=-50\text{A}/\mu\text{s}$ $V_{RM}=30\text{V}$	-	47	-
			$T_j=25^\circ\text{C}$	$I_F=4\text{A}$ $di/dt=-200\text{A}/\mu\text{s}$ $V_{RM}=200\text{V}$	-	49	-
			$T_j=125^\circ\text{C}$		-	78	-
Peak recovery current	I_{RRM}	A	$T_j=25^\circ\text{C}$	$I_F=4\text{A}$ $di/dt=-200\text{A}/\mu\text{s}$ $V_{RM}=200\text{V}$	-	6.7	-
			$T_j=125^\circ\text{C}$		-	10.2	-
Reverse recovery charge	Q _{rr}	nC	$T_j=25^\circ\text{C}$	$I_F=4\text{A}$ $di/dt=-200\text{A}/\mu\text{s}$ $V_{RM}=200\text{V}$	-	163.8	-
			$T_j=125^\circ\text{C}$		-	397.2	-
Non-repetitive avalanche energy	E _{AS}	mJ	$T_j=25^\circ\text{C}$	$I_R=2.4\text{A}$, $L=15\text{mH}$	43.2	-	-

■ MUR480

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$, $di/dt=-50\text{A}/\mu\text{s}$ $V_{RM}=30\text{V}$	-	51	-
			$T_j=25^\circ\text{C}$	$I_F=4\text{A}$ $di/dt=-200\text{A}/\mu\text{s}$ $V_{RM}=400\text{V}$	-	64	-
			$T_j=125^\circ\text{C}$		-	114	-
Peak recovery current	I_{RRM}	A	$T_j=25^\circ\text{C}$	$I_F=4\text{A}$ $di/dt=-200\text{A}/\mu\text{s}$ $V_{RM}=400\text{V}$	-	7.4	-
			$T_j=125^\circ\text{C}$		-	11.2	-
Reverse recovery charge	Q _{rr}	nC	$T_j=25^\circ\text{C}$	$I_F=4\text{A}$ $di/dt=-200\text{A}/\mu\text{s}$ $V_{RM}=400\text{V}$	-	235.8	-
			$T_j=125^\circ\text{C}$		-	635.8	-
Non-repetitive avalanche energy	E _{AS}	mJ	$T_j=25^\circ\text{C}$	$I_R=2.8\text{A}$, $L=15\text{mH}$	58.8	-	-

■ **MUR4100**

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$, $di/dt=-50\text{A/us}$ $V_{RM}=30\text{V}$	-	63	-
			$T_j=25^\circ\text{C}$		-	84	-
			$T_j=125^\circ\text{C}$		-	165	-
Peak recovery current	I_{RRM}	A	$T_j=25^\circ\text{C}$	$I_F=4\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=400\text{V}$	-	8.5	-
			$T_j=125^\circ\text{C}$		-	13.2	-
Reverse recovery charge	Q_{rr}	nC	$T_j=25^\circ\text{C}$		-	356.4	-
			$T_j=125^\circ\text{C}$		-	1092.7	-
Non-repetitive avalanche energy	E_{AS}	mJ	$T_j=25^\circ\text{C}$		$I_R=2.0\text{A}$, $L=15\text{mH}$	30.0	-

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

PARAMETER	SYMBOL	UNIT	MUR420	MUR440	MUR460	MUR480	MUR4100
Typical Thermal Resistance	$R_{\theta J-A}$	$^\circ\text{C/W}$	20				

■ **PACKAGING INFORMATION**

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR420-MUR4100	D1	Approximate 1.05	1250	1250	12500	Tape
MUR420-MUR4100	C1	Approximate 1.05	250	250	12500	Bulk

■ **CHARACTERISTICS (TYPICAL)**

FIG.1: I_o - T_a Curve

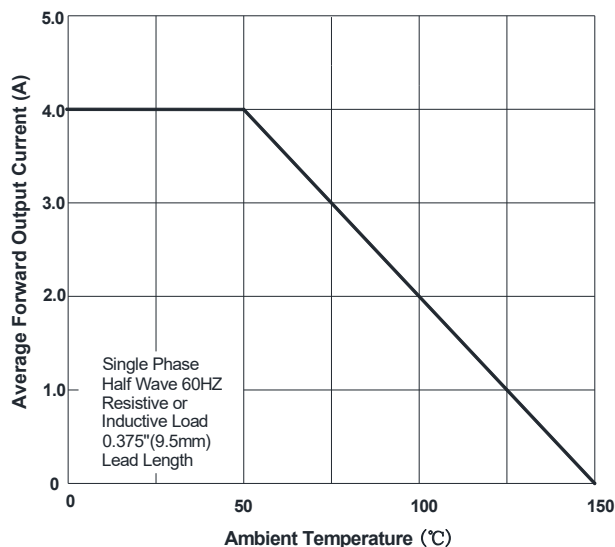


FIG.2: Forward Surge Current Capability

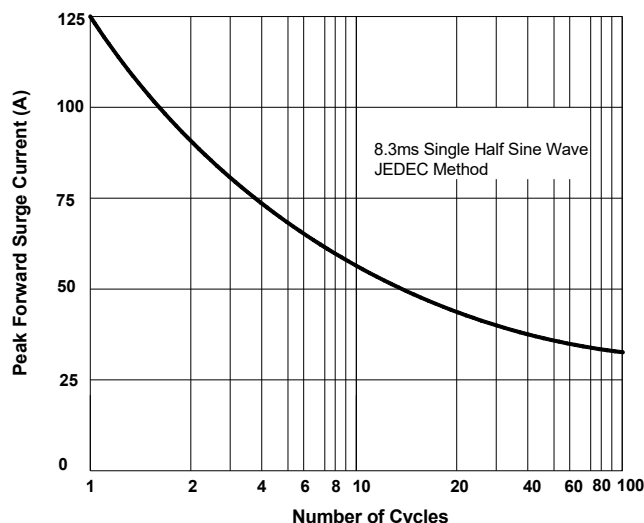


FIG.3: Forward Voltage

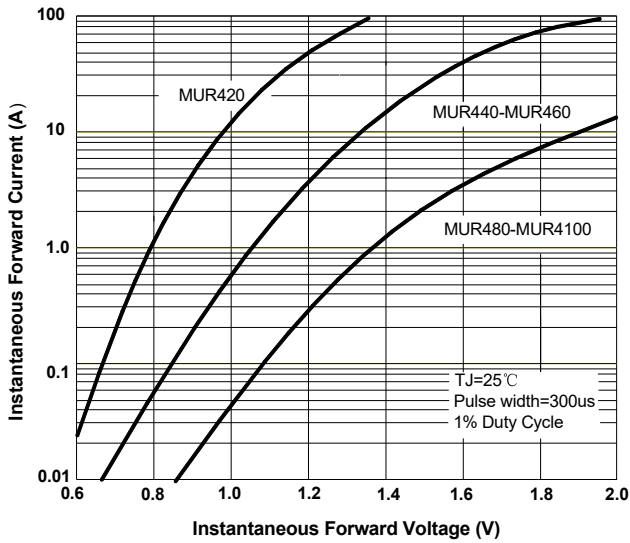


FIG.4: Typical Reverse Characteristics

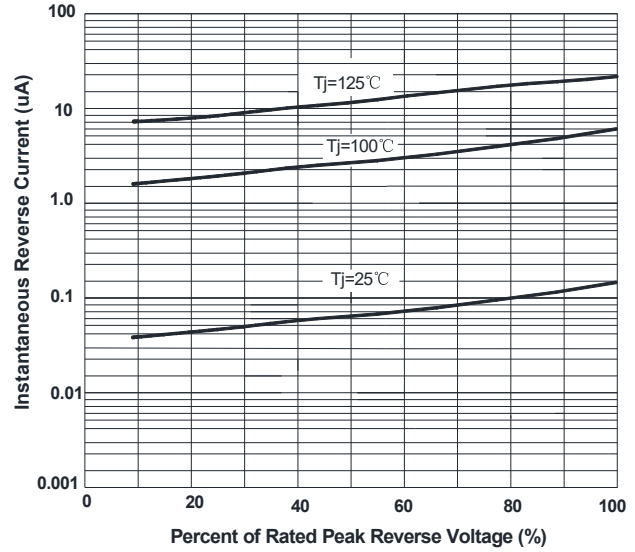
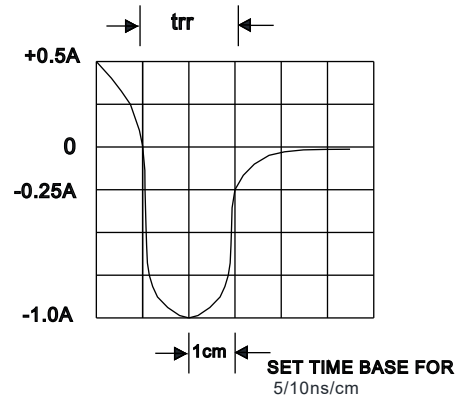
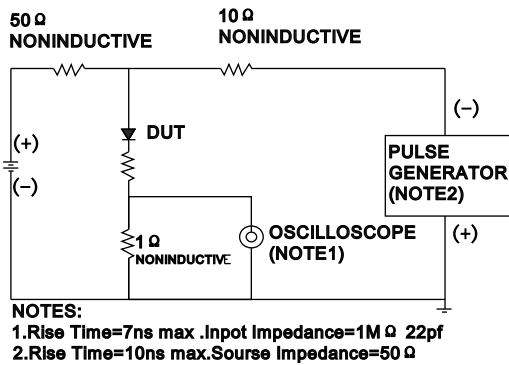
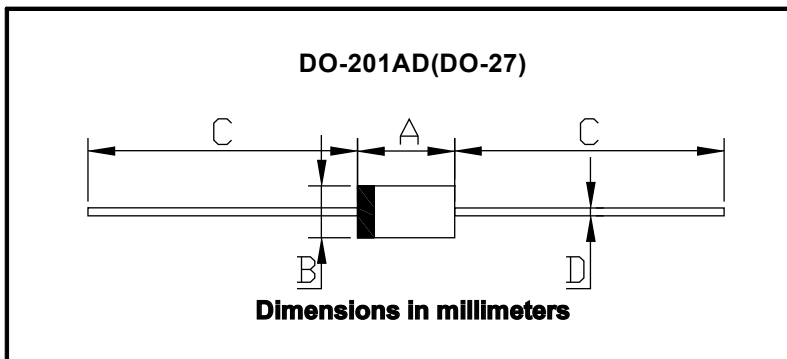


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■ **OUTLINE DIMENSIONS**



DO-201AD(DO-27)		
Dim	Min	Max
A	8.50	9.50
B	5.00	5.60
C	25.4	/
D	1.20	1.30