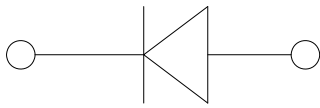
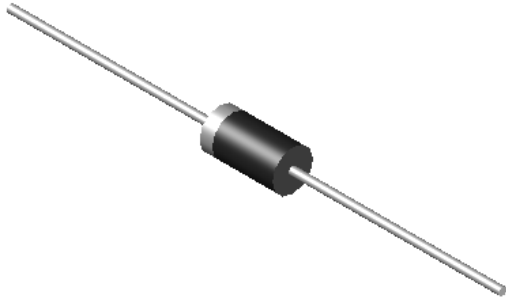


## Super Fast Rectifier



### 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 <sub>RRM</sub>	V	200	400	600	800	1000
Maximum RMS Voltage	V <sub>RMS</sub>	V	140	280	420	560	700
Maximum DC blocking Voltage	V <sub>DC</sub>	V	200	400	600	800	1000
Average Forward Current @60Hz sine wave, Resistance load, Ta =50°C	I <sub>F(AV)</sub>	A	4.0				
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, Tj=25°C	I <sub>FSM</sub>	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 <sup>2</sup> t	A <sup>2</sup> s	65				
Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	C <sub>j</sub>	pF	60	51		45	50
Storage Temperature	T <sub>stg</sub>	°C	-55 ~ +150				
Junction Temperature	T <sub>j</sub>	°C	-55 ~ +150				



# MUR420 THRU MUR4100

## ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MUR420	MUR440	MUR460	MUR480	MUR4100
Maximum instantaneous forward voltage drop per diode	V <sub>F</sub>	V	I <sub>FM</sub> =4.0A	0.89	1.28		1.85	
Maximum DC reverse current at rated DC blocking voltage per diode	I <sub>R</sub>	μA	T <sub>j</sub> =25°C	2.5				
			T <sub>j</sub> =125°C	100				
Maximum reverse recovery time	t <sub>rr</sub>	ns	I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>r</sub> =0.25A	25	50		75	

## ■ Dynamic Characteristics

### ◆ MUR420

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T <sub>RR</sub>	ns	T <sub>j</sub> =25°C	I <sub>F</sub> =1A, di/dt=-50A/us V <sub>RM</sub> =30V	-	31	-
			T <sub>j</sub> =25°C	I <sub>F</sub> =4A di/dt=-200A/us V <sub>RM</sub> =100V	-	23	-
			T <sub>j</sub> =125°C		-	39	-
Peak recovery current	I <sub>RRM</sub>	A	T <sub>j</sub> =25°C	I <sub>F</sub> =4A di/dt=-200A/us V <sub>RM</sub> =100V	-	4.1	-
			T <sub>j</sub> =125°C		-	7.0	-
Reverse recovery charge	Q <sub>rr</sub>	nC	T <sub>j</sub> =25°C	I <sub>F</sub> =4A di/dt=-200A/us V <sub>RM</sub> =100V	-	47.4	-
			T <sub>j</sub> =125°C		-	136.8	-
Non-repetitive avalanche energy	E <sub>AS</sub>	mJ	T <sub>j</sub> =25°C	I <sub>R</sub> =2.4 A, L=15 mH	43.2	-	-

### ◆ MUR440 THRU MUR460

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T <sub>RR</sub>	ns	T <sub>j</sub> =25°C	I <sub>F</sub> =1A, di/dt=-50A/us V <sub>RM</sub> =30V	-	47	-
			T <sub>j</sub> =25°C	I <sub>F</sub> =4A di/dt=-200A/us V <sub>RM</sub> =200V	-	49	-
			T <sub>j</sub> =125°C		-	78	-
Peak recovery current	I <sub>RRM</sub>	A	T <sub>j</sub> =25°C	I <sub>F</sub> =4A di/dt=-200A/us V <sub>RM</sub> =200V	-	6.7	-
			T <sub>j</sub> =125°C		-	10.2	-
Reverse recovery charge	Q <sub>rr</sub>	nC	T <sub>j</sub> =25°C	I <sub>F</sub> =4A di/dt=-200A/us V <sub>RM</sub> =200V	-	163.8	-
			T <sub>j</sub> =125°C		-	397.2	-
Non-repetitive avalanche energy	E <sub>AS</sub>	mJ	T <sub>j</sub> =25°C	I <sub>R</sub> =2.4 A, L=15 mH	43.2	-	-

### ◆ MUR480

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T <sub>RR</sub>	ns	T <sub>j</sub> =25°C	I <sub>F</sub> =1A, di/dt=-50A/us V <sub>RM</sub> =30V	-	51	-
			T <sub>j</sub> =25°C	I <sub>F</sub> =4A di/dt=-200A/us V <sub>RM</sub> =400V	-	64	-
			T <sub>j</sub> =125°C		-	114	-
Peak recovery current	I <sub>RRM</sub>	A	T <sub>j</sub> =25°C	I <sub>F</sub> =4A di/dt=-200A/us V <sub>RM</sub> =400V	-	7.4	-
			T <sub>j</sub> =125°C		-	11.2	-
Reverse recovery charge	Q <sub>rr</sub>	nC	T <sub>j</sub> =25°C	I <sub>F</sub> =4A di/dt=-200A/us V <sub>RM</sub> =400V	-	235.8	-
			T <sub>j</sub> =125°C		-	635.8	-
Non-repetitive avalanche energy	E <sub>AS</sub>	mJ	T <sub>j</sub> =25°C	I <sub>R</sub> =2.8A, L=15 mH	58.8	-	-



# MUR420 THRU MUR4100

## ◆ 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	-
			$T_j=25^\circ\text{C}$	$I_F=4\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=400\text{V}$	-	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	$T_j=25^\circ\text{C}$	$I_F=4\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=400\text{V}$	-	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				

## ■ Ordering Information (Example)

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

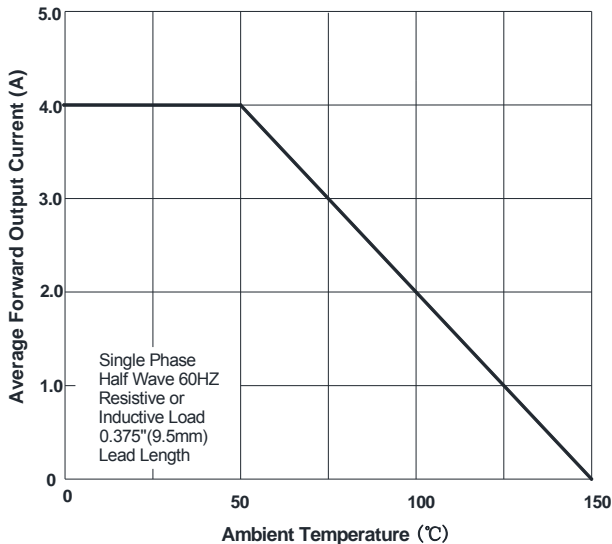
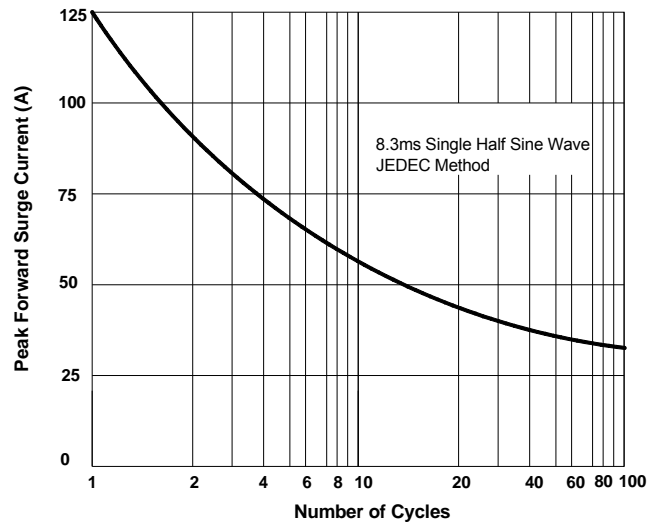


FIG.2: Forward Surge Current Capability





# MUR420 THRU MUR4100

FIG.3: Forward Voltage

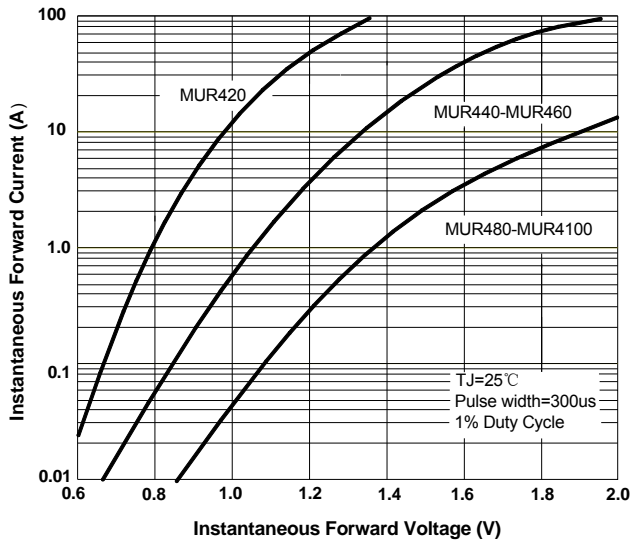


FIG.4: Typical Reverse Characteristics

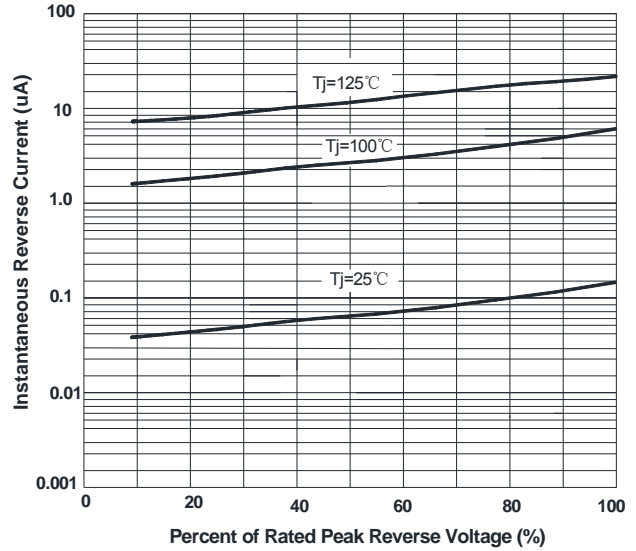
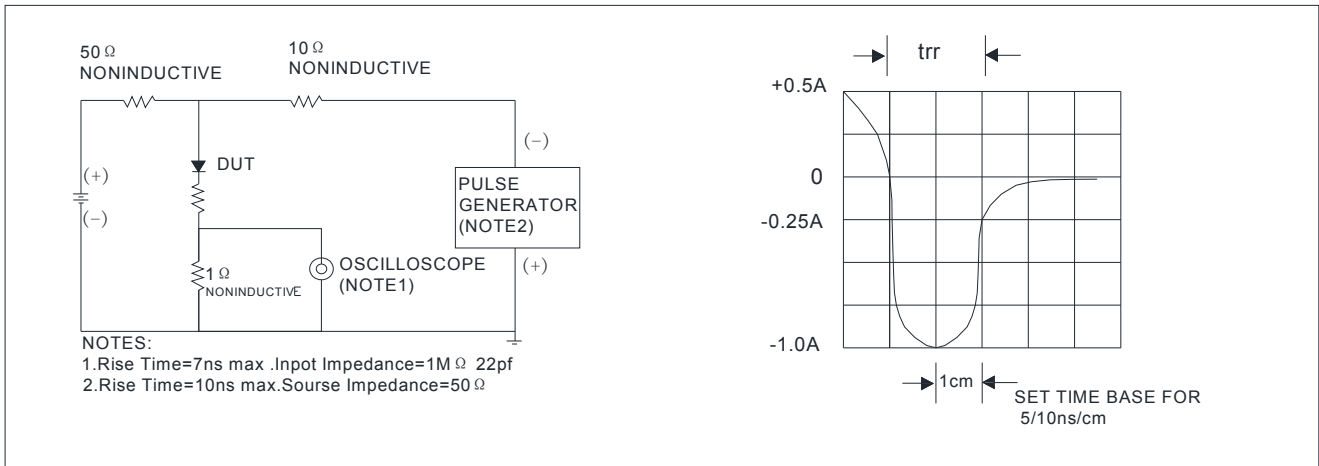
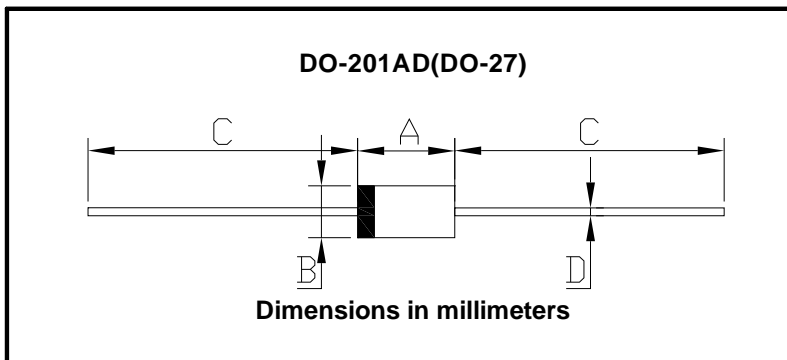


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



## ■ 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



## MUR420 THRU MUR4100

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