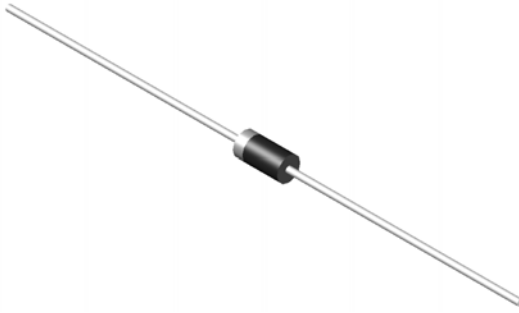


## Super Fast Recovery Rectifier

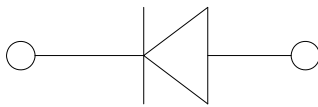


### Features

- 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-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 (Ta=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, Ta =75°C	$I_{F(AV)}$	A	1.0		
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, Tj=25°C	$I_{FSM}$	A	35		
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25°C			70		
Current squared time @1ms≤t≤8.3ms Tj=25°C, Rating of per diode	$I^2t$	A <sup>2</sup> s	5		
Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	Cj	pF	17	16	
Storage Temperature	Tstg	°C	-55 ~ +150		
Junction Temperature	Tj	°C	-55 ~ +150		



# MUR120 THRU MUR160

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MUR120	MUR140	MUR160
Maximum instantaneous forward voltage drop per diode	V <sub>F</sub>	V	I <sub>FM</sub> =1.0A	0.875	1.25	
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>rr</sub> =0.25A	25	50	

## ■Dynamic Characteristics

### ◆ MUR120

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	-	26	-
			T <sub>j</sub> =25°C	I <sub>F</sub> =1A di/dt=-200A/us V <sub>RM</sub> =100V	-	21	-
			T <sub>j</sub> =125°C		-	23	-
Peak recovery current	I <sub>RPM</sub>	A	T <sub>j</sub> =25°C	I <sub>F</sub> =1A di/dt=-200A/us V <sub>RM</sub> =100V	-	2.6	-
			T <sub>j</sub> =125°C		-	3.9	-
Reverse recovery charge	Q <sub>rr</sub>	nC	T <sub>j</sub> =25°C	I <sub>F</sub> =1A di/dt=-200A/us V <sub>RM</sub> =100V	-	26.8	-
			T <sub>j</sub> =125°C		-	44.9	-
Non-repetitive avalanche energy	E <sub>AS</sub>	mJ	T <sub>j</sub> =25°C	I <sub>R</sub> =1.6 A, L=15 mH	19.2	-	-

### ◆ MUR140 THRU MUR160

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	-	46	-
			T <sub>j</sub> =25°C	I <sub>F</sub> =1A di/dt=-200A/us V <sub>RM</sub> =400V	-	36	-
			T <sub>j</sub> =125°C		-	56	-
Peak recovery current	I <sub>RPM</sub>	A	T <sub>j</sub> =25°C	I <sub>F</sub> =1A di/dt=-200A/us V <sub>RM</sub> =400V	-	3.6	-
			T <sub>j</sub> =125°C		-	5.2	-
Reverse recovery charge	Q <sub>rr</sub>	nC	T <sub>j</sub> =25°C	I <sub>F</sub> =1A di/dt=-200A/us V <sub>RM</sub> =400V	-	63.5	-
			T <sub>j</sub> =125°C		-	144.5	-
Non-repetitive avalanche energy	E <sub>AS</sub>	mJ	T <sub>j</sub> =25°C	I <sub>R</sub> =1.3A, L=15 mH	12.7	-	-

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

PARAMETER	SYMBOL	UNIT	MUR120	MUR140	MUR160
Typical Thermal Resistance	R <sub>θJA</sub>	°C/W	60		



# MUR120 THRU MUR160

## Ordering Information (Example)

PREFERED 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

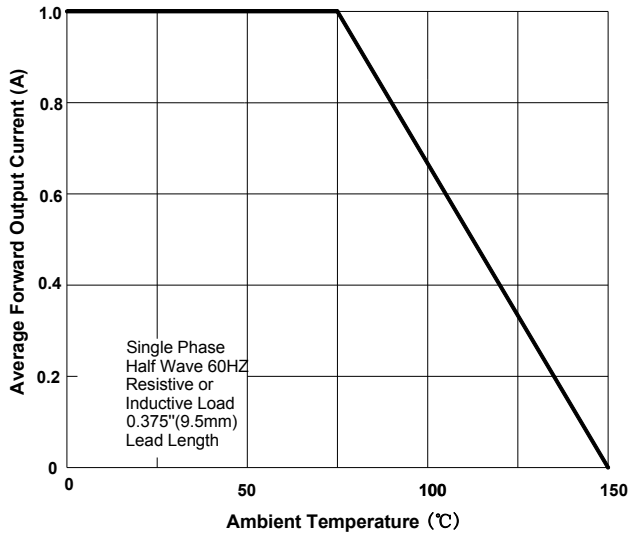


FIG.2: Forward Surge Current Capability

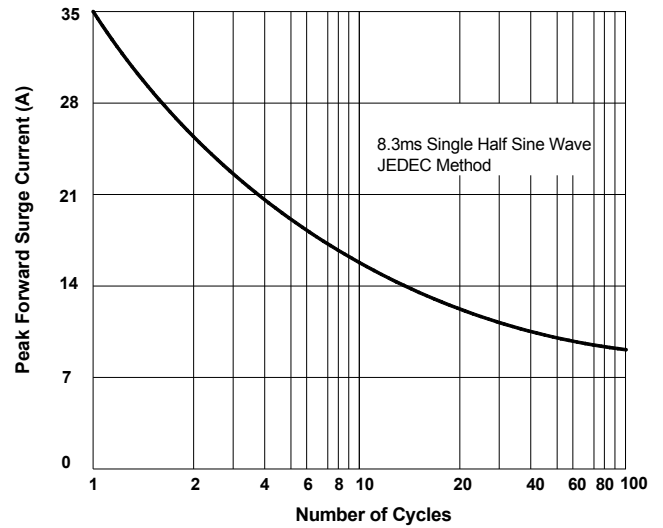


FIG.3: Forward Voltage

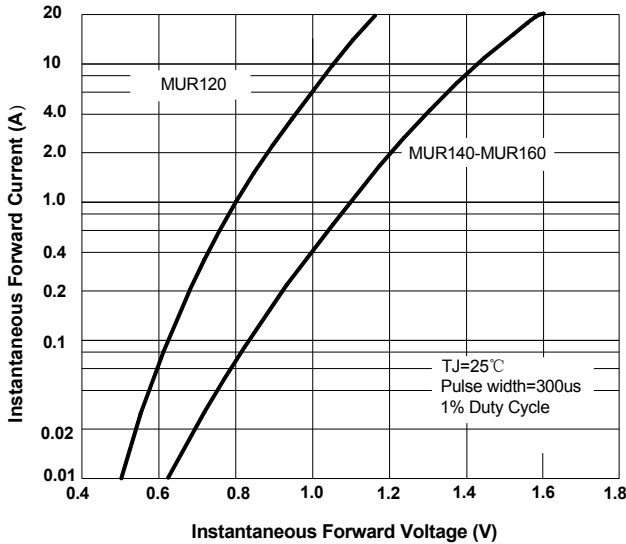
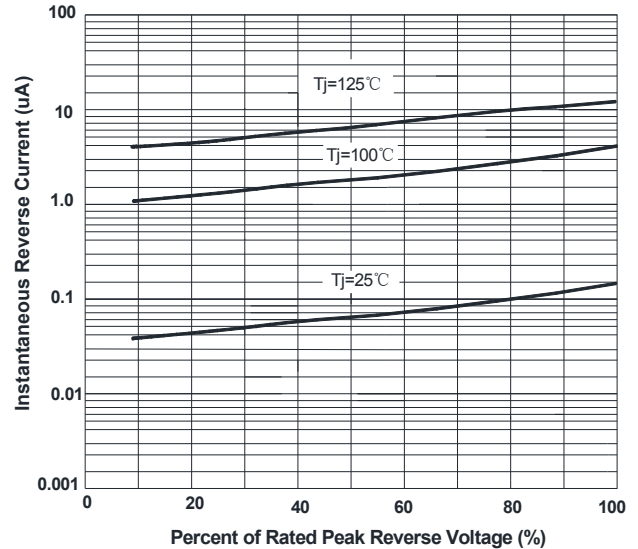


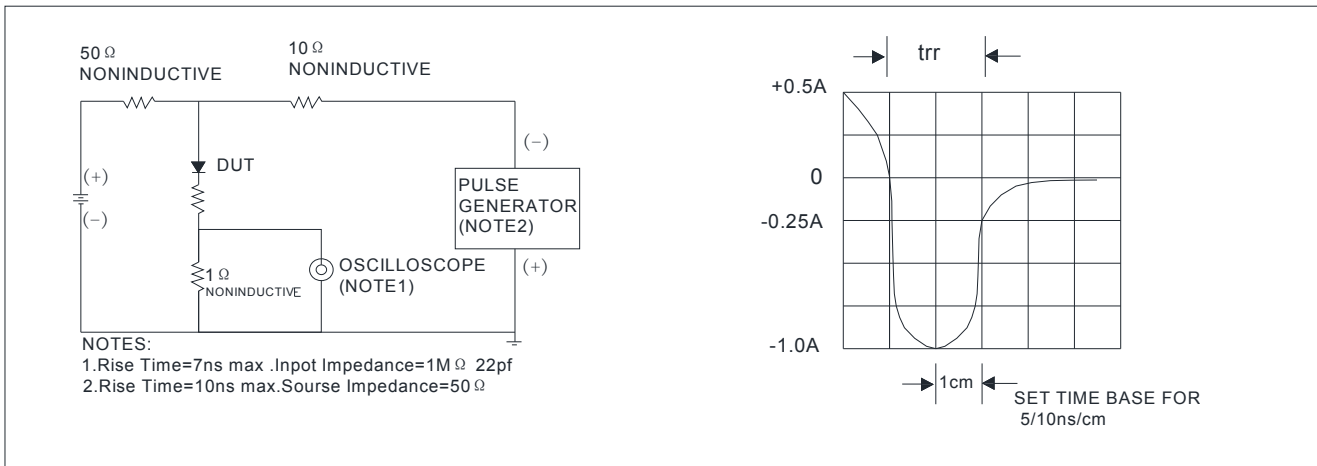
FIG.4: Typical Reverse Characteristics



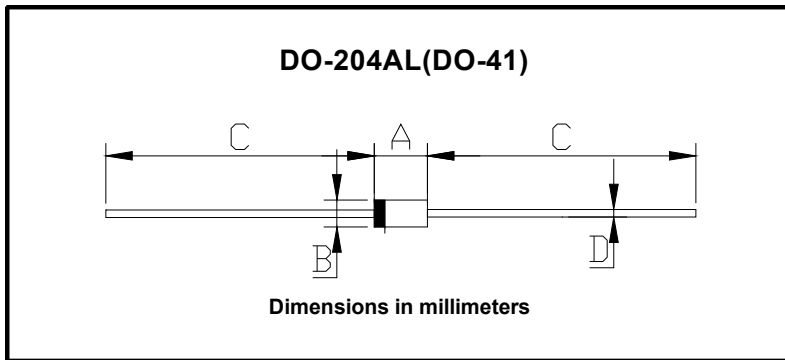


# MUR120 THRU MUR160

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



## ■ Outline Dimensions



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



## MUR120 THRU MUR160

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