

MUR420E THRU MUR4100E

High Efficiency Rectifier



Voltage: 100~1000 Volts

Current: 4.0 A

Package: DO-27

Features

- NH'S High Efficiency Rectifier Chip Technology
- Low Switching Loss For High Efficiency
- Low Leakage Current For High Reliability
- Ultra Fast Switching Speed

Mechanical Data

- **Case:** Molded With UL-94 Class V-0 Recognized, RoHS-Compliant
- **Polarity:** Look At The Diagram And Polarity On The Right
- **Terminals:** Tin Plated Leads, Solderable Per J-STD-002 And JESD22-B102

Typical Applications

- Switch Mode Power Supplies (SMPS)
- Fast Chargers
- LED Driver And Monitor Lighting
- Automotive Electronics And Charging Posts

Diagram:



Polarity:



Single Phase, Half Wave, 60Hz, Resistive Or Inductive Load. For Capacitive Load, Derate Current By 20%

Maximum Ratings (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	MUR 410E	MUR 420E	MUR 440E	MUR 460E	MUR 480E	MUR 4100E	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	100	200	400	600	800	1000	V
Maximum RMS Voltage		V_{RMS}	70	140	280	420	560	700	V
Maximum DC Blocking Voltage		V_{DC}	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current		$I_{F(AV)}$	4.0						A
Peak Forward Surge Current	8.3ms Single Half Sine-wave Superimposed On Rate Load	I_{FSM}	150						A
Current Squared Time	$t < 8.3ms$	I^2t	93.4						A ² sec

Electrical Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	MUR 410E	MUR 420E	MUR 440E	MUR 460E	MUR 480E	MUR 4100E	Unit
Maximum Instaneous Forward Voltage	I _F = 4.0 A	V _F	1.35				1.70		V
Maximum DC Reverse Current at Rated DC Blocking Voltage	Ta=25℃ ,V _R =VRRM Ta=125℃ ,V _R =VRRM*80%	I _{RRM}	5 200						uA uA
Typical Junction Capacitance	4 V,1MHz	C _J	70			35	30		pF
Maximum Reverse Recovery Time	IF=0.5A, IR=1.0A, IRR=0.25A	T _{rr}	50				75		nS

Thermal Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	MUR 410E	MUR 420E	MUR 440E	MUR 460E	MUR 480E	MUR 4100E	Unit
Operating Junction Temperature Range		T _J	-55~150						℃
Storage Temperature Range		T _{STD}	-55~150						
Thermal Resistance Junction To Ambient With Steady-State	Still Air Environment With Ta=25℃	R _{θJA}	45.0						℃/W
Thermal Resistance Junction-Case With Steady-State	At 0.375"(9.5mm) lead length Mounted On vertical P.C. Board	R _{θJC}	12.0						

Notes: 1. Pulse Test: 300 Us Pulse Width, 1% Duty Cycle

MUR420E THRU MUR4100E

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Typical Characteristics Curves

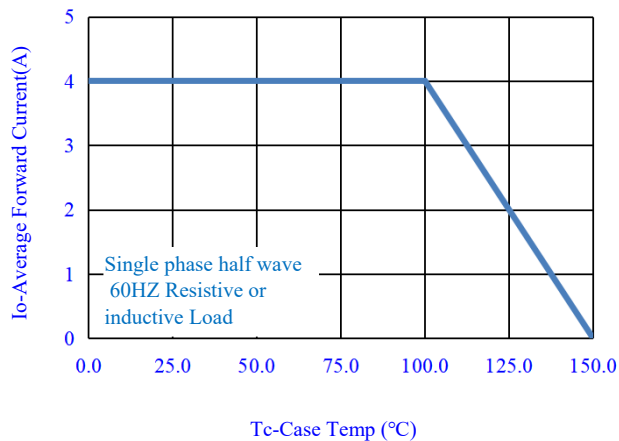


Fig.1-Forward Current Derating Curve

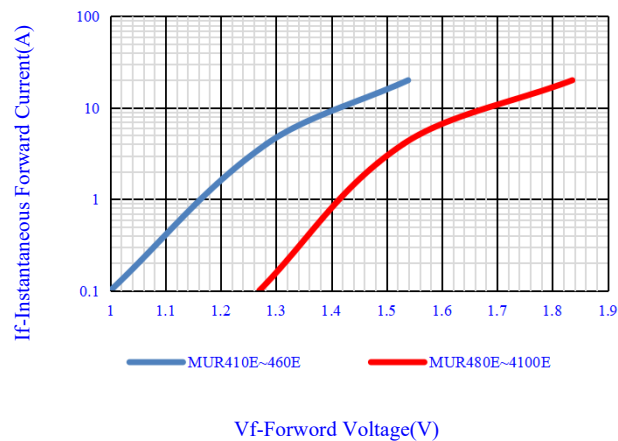


Fig.2-Typical Instantaneous Forward

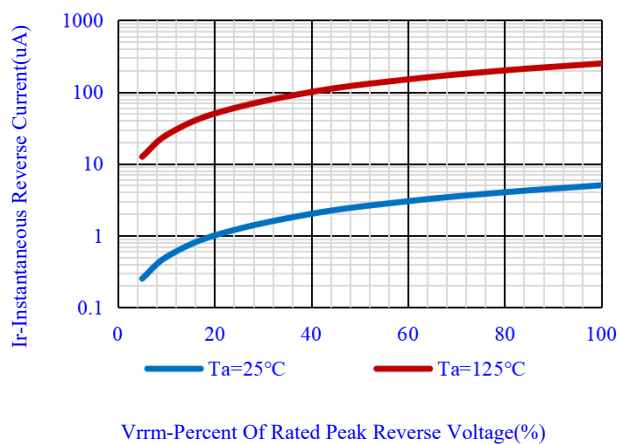


Fig.3-Typical Reverse Characteristics

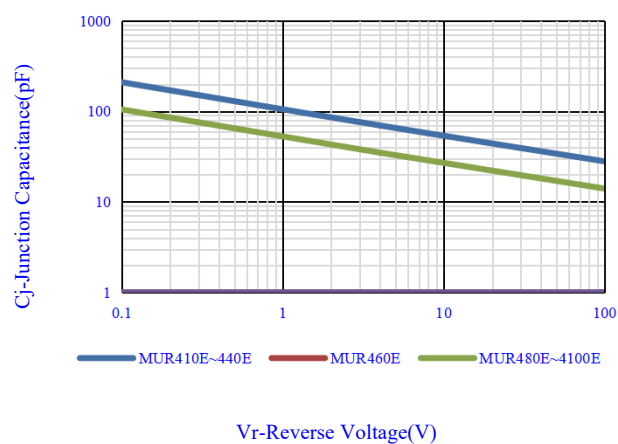


Fig.4-Typical Junction Capacitance

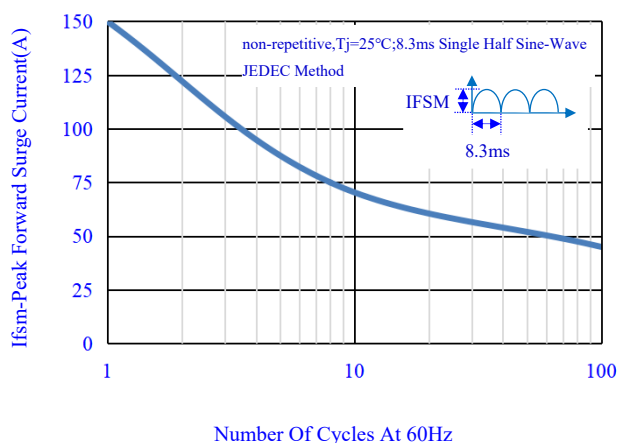


Fig.5-Max. Non-Repetitive Surge Current

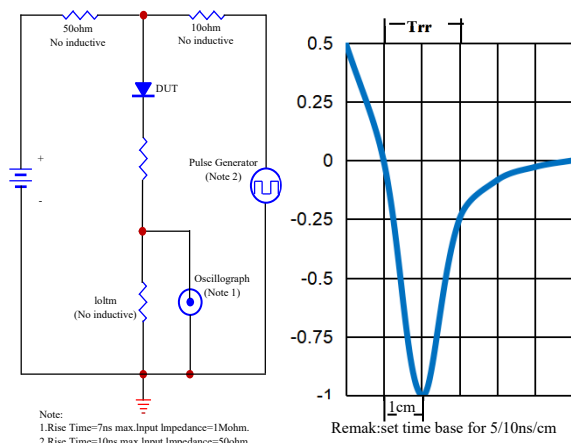
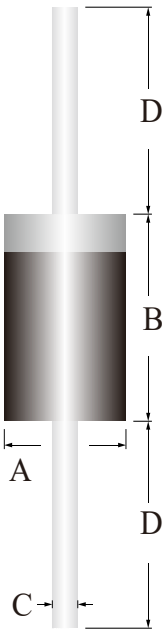


Fig.6-Reverse Recovery Time Characteristic And Test Circuit

MUR420E THRU MUR4100E
High Efficiency Rectifier



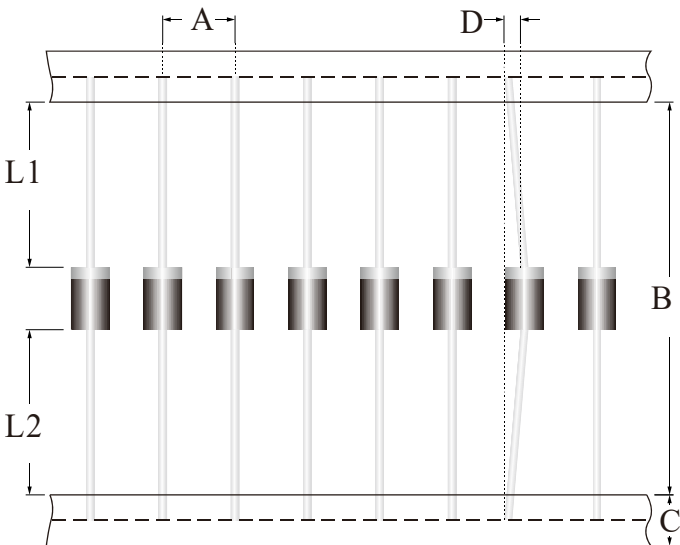
OUTLINE DRAWINGS



DO-27

OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.90	-	5.60	0.1929	-	0.2205
B	8.00	-	10.00	0.3150	-	0.3937
C	1.00	-	1.40	0.0394	-	0.0551
D	24.50	-	26.50	0.9646	-	1.0433

COMPONENT PITCH DIMENSION DIAGRAM



DO-27

OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.50	-	10.50	0.3740	-	0.4134
B	51.00	-	53.00	2.0079	-	2.0866
C	5.50	-	6.50	0.2165	-	0.2559
D	-	-	1.20	-	-	0.0472
L2-L1	-	-	1.00	-	-	0.0394

MUR420E THRU MUR4100E

High Efficiency Rectifier



MARKING



MARKING INSTRUCTION

NH=Niuhan Trademark
FF=Product Line Code,According To Actual Changes
DDK=Internal Code,According To Actual Changes
MUR4xxE=Model,xx=10,20,40,60,80,100
White band denotes cathode

PACKING INFORMATION

Package Type	Package Code	Product Weight Approx(g/Pcs)	Package Method	Quantity (Pcs/Min. Pack.)	Quantity (Pcs/Inner Box)	Quantity (Pcs/Carton)
DO-27	P1	1	Tape	1000	1000	20000
DO-27	P2	1	Tape	1250	1250	12500

MUR420E THRU MUR4100E

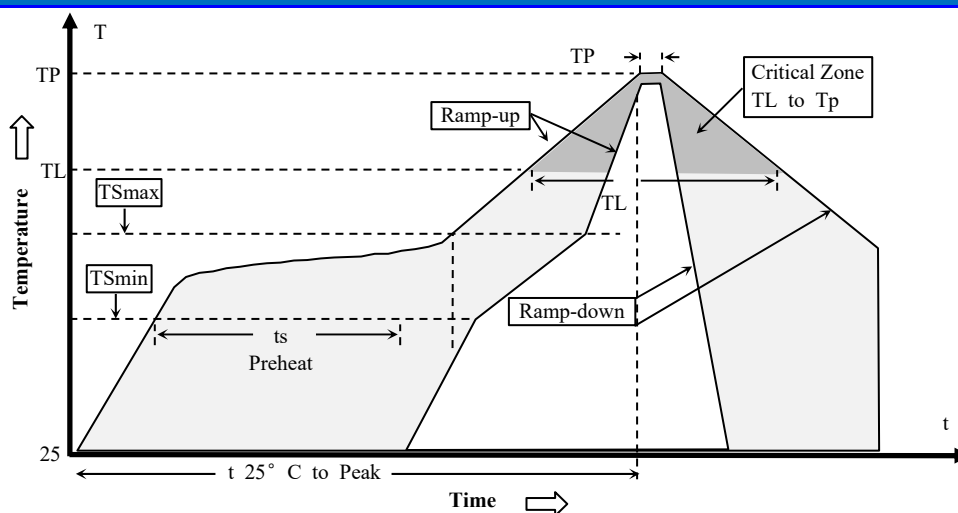
High Efficiency Rectifier



Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T _{smax} to T _p)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(T _S min) -Temperature Max(T _S max) -Time(t _s min to t _s max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (T _L) - Time (t _L)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T _P)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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