America Semiconductor

Silicon Super Fast Recovery Diode

MUR20005CT thru MUR20020CTR

V_{RRM} = 50 V - 600 V

I_F = 200 A

Features

- High Surge Capability
- Types up to 600 V V_{RRM}

Twin Tower Package

Maximum ratings, at T_j = 25 °C, unless otherwise specified ("R" devices have leads reversed)

Parameter	Symbol	Conditions	MUR20005CT (R)	MUR20010CT (R)	MUR20020CT (R)	Unit
Repetitive peak reverse voltage	V_{RRM}		50	100	200	V
RMS reverse voltage	V_{RMS}		35	70	140	V
DC blocking voltage	V_{DC}		50	100	200	V
Continuous forward current	I_F	$T_C \leq$ 140 °C	200	200	200	A
Surge non-repetitive forward current, Half Sine Wave	$I_{F,SM}$	T_C = 25 °C, t_p = 8.3 ms	800	800	800	A
Operating temperature	T_j		-40 to 175	-40 to 175	-40 to 175	°C
Storage temperature	T_{stg}		-40 to 175	-40 to 175	-40 to 175	°C

Electrical characteristics, at Tj = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions	MUR20005CT (R)	MUR20010CT (R)	MUR20020CT (R)	Unit
Diode forward voltage	V_F	I_F = 100 A, T_j = 25 °C	1.3	1.3	1.3	V
Reverse current	I_R	V_R = 50 V, T_j = 25 °C	25	25	25	µA
		V_R = 50 V, T_j = 125 °C	1	1	1	mA
Recovery Time						
Maximum reverse recovery time	T_{RR}	I_F=0.5 A, I_R=1.0 A, I_{RR}= 0.25 A	75	75	75	nS

RoHS Compliant

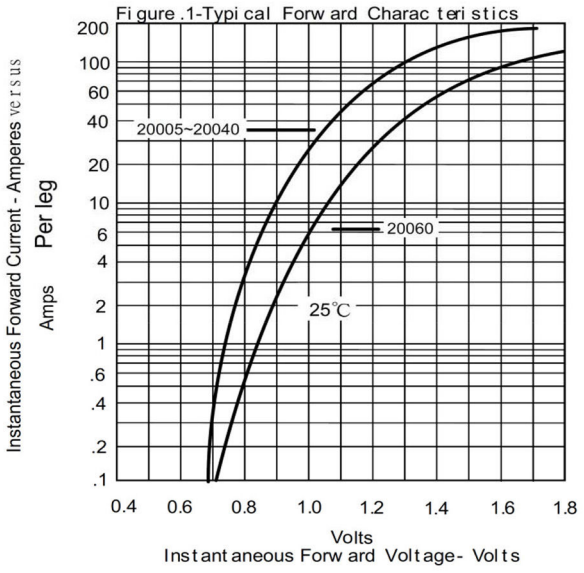
Figure .1-Typical Forward Characteristics
Instantaneous Forward Current - Amperes versus
Amps Per leg
200
100
60
40
20
10
6
4
2
1
.6
.4
.2
.1
20005~20040
20060
25℃
0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8
Volts
Instantaneous Forward Voltage- Volts

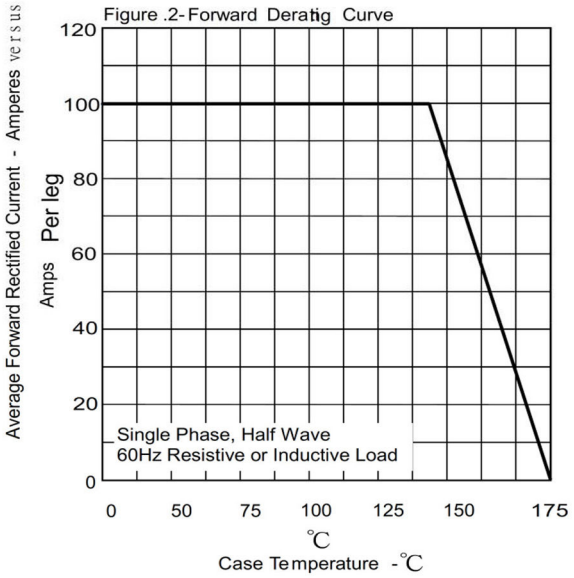
Figure .2-Forward Derating Curve
Average Forward Rectified Current - Amperes versus
Amps Per leg
120
100
80
60
40
20
0
Single Phase, Half Wave
60Hz Resistive or Inductive Load
0 50 75 100 125 150 175
℃
Case Temperature -℃

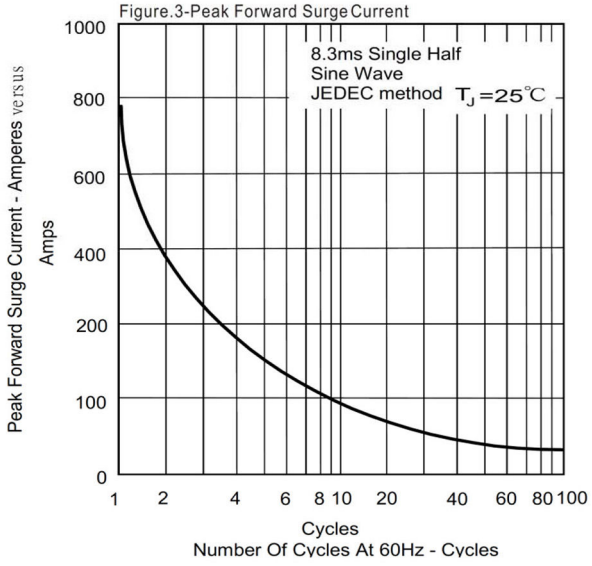
Figure.3-Peak Forward Surge Current
Peak Forward Surge Current - Amperes versus
Amps
1000
800
600
400
200
100
0
8.3ms Single Half
Sine Wave
JEDEC method TJ=25℃
1 2 4 6 8 10 20 40 60 80 100
Cycles
Number Of Cycles At 60Hz - Cycles

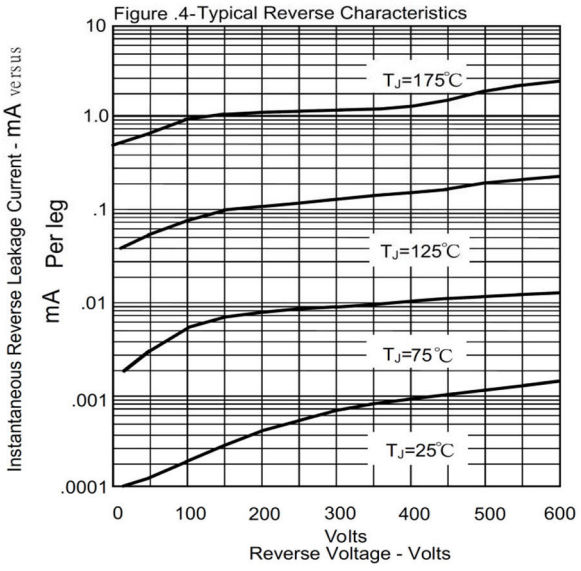
Figure .4-Typical Reverse Characteristics
Instantaneous Reverse Leakage Current - mA versus
mA Per leg
10
1.0
.1
.01
.001
.0001
TJ=175℃
TJ=125℃
TJ=75℃
TJ=25℃
0 100 200 300 400 500 600
Volts
Reverse Voltage - Volts