

Applications

- Freewheeling, Snubber, Clamp
- Inversion Welder
- PFC
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- UPS

Features

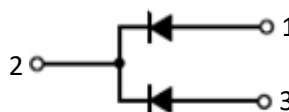
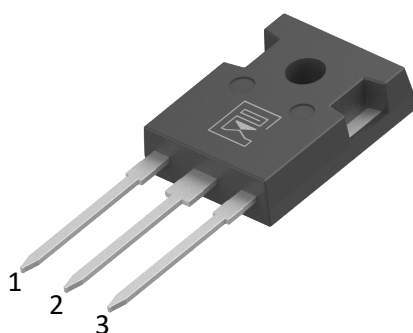
- Ultrafast Recovery Time
- Soft Recovery Characteristics
- Low Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Leakage Current

Product Summary

V_{RRM}	200	V
$I_F@T_c=110^{\circ}\text{C}$	30X2	A
$V_{F,TYP}@20\text{A},T_c=25^{\circ}\text{C}$	0.9	V
$V_{F,TYP}@20\text{A},T_c=125^{\circ}\text{C}$	0.8	V
$I_{R,MAX}@T_c=25^{\circ}\text{C}$	10	uA



TO-247S



Anode: 1
Cathde: 2
Anode: 3

Package Marking and Ordering Information

Ordering code	Marking	Package	Packaging	Min. package quantity
MS-M60FU20CT	M60FU20CT	TO-247S	Tube	450

Absolute Maximum Ratings (Tc=25°C unless otherwise noted)

Parameter	Test Conditions	Symbol	Ratings	Unit
D.C. Reverse Voltage		V_R	200	V
Repetitive Reverse Voltage		V_{RRM}	200	V
Average Forward Current	$T_C=110^{\circ}\text{C}$, Duty=0.5	$I_{F(AV)}(\text{per leg})$	30	A
		$I_{F(AV)}(\text{Total})$	60	A
Non-Repetitive Peak Surge Current	$T=25^{\circ}\text{C}$, 8.3ms	I_{FSM}	300	A
Junction Temperature		T_J	175	$^{\circ}\text{C}$
Storage Temperature		T_{stg}	-55 to +175	$^{\circ}\text{C}$

Thermal Characteristics

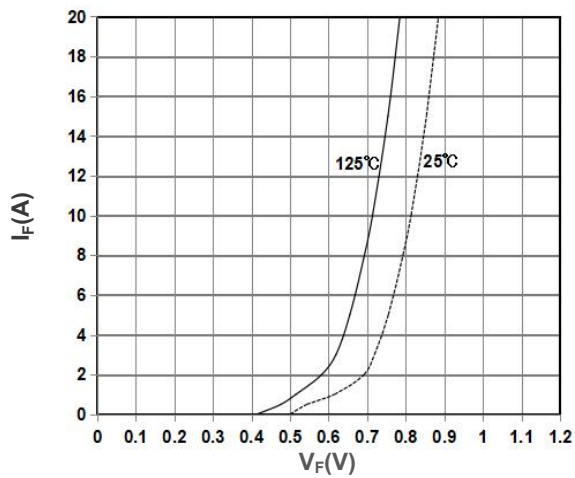
Parameter	Symbol	Package	Max	Unit
Maximum Thermal Resistance	$R_{\theta JC}$	TO-247S	1	$^{\circ}\text{C}/\text{W}$

Electrical Characteristics (Tc=25°C unless otherwise noted)

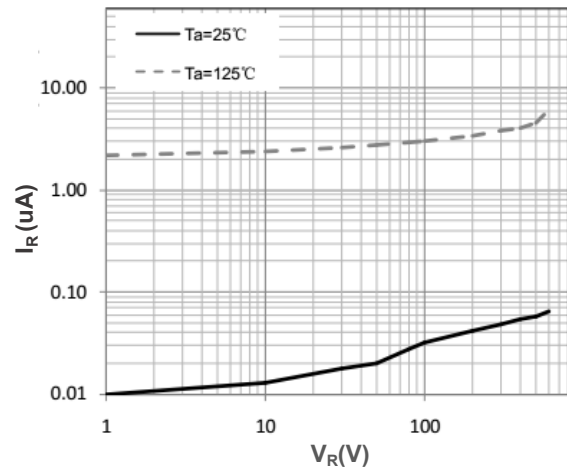
Parameter	Symbol	Test Condition		Min	Typ	Max	Unit
Forward Voltage	V_F	$I_F=20\text{A}$, $T_J=25^{\circ}\text{C}$		-	0.9	1.2	V
		$I_F=20\text{A}$, $T_J=125^{\circ}\text{C}$		-	0.8	-	V
Reverse Leakage Current	I_{RM}	$V_R=200\text{V}$, $T_J=25^{\circ}\text{C}$		-	-	10	μA
		$V_R=200\text{V}$, $T_J=125^{\circ}\text{C}$		-	-	200	μA
Reverse Recovery Time	t_{rr}	$I_F=1\text{A}$, $V_R=30\text{V}$, $diF/dt=-200\text{A}/\mu\text{s}$		-	16	-	ns
Reverse Recovery Time	t_{rr}	$I_F=30\text{A}$ $V_R=100\text{V}$ $diF/dt=-200\text{A}/\mu\text{s}$	$T_J=25^{\circ}\text{C}$	-	24	-	ns
Reverse Recovery Time	t_{rr}		$T_J=125^{\circ}\text{C}$	-	38	-	ns
Reverse Recovery Charge	Q_{rr}		$T_J=125^{\circ}\text{C}$	-	89	-	nC
Max. Reverse Recovery Current	I_{RRM}		$T_J=125^{\circ}\text{C}$	-	4.7	-	A



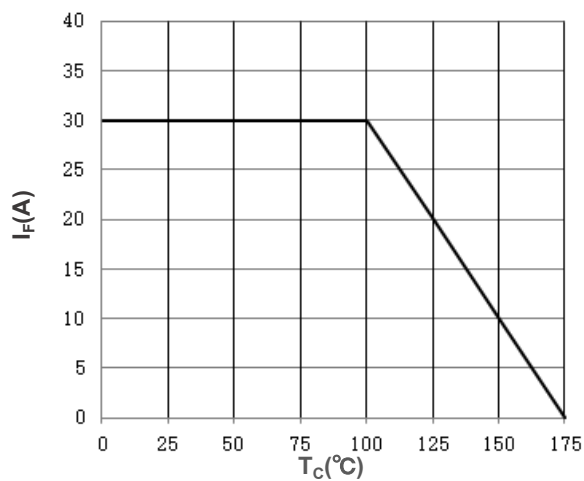
Characteristics Curves



Forward Characteristics Per Die



Reverse Characteristics Per Die



Current Derating Per Die



» TO-247S Package Dimensions

Unit: mm

Symbol	Min	Nom	Max	Symbol	Min	Nom	Max
A	4.80	5.00	5.20	E1	13.00		13.60
A1	2.20	2.40	2.60	E2	5.00		5.50
A2	1.40	1.50	1.60	E3	1.90		2.60
b	1.07	1.20	1.33	e	5.25	5.45	5.65
b2	1.90	2.10	2.30	L	19.50	20.00	20.50
b4	2.90	3.10	3.30	L1	4.00	4.20	4.40
c	0.52	0.60	0.68	ΦP	3.50	3.70	3.90
D	20.80	21.00	21.20	ΦP1	7.00		7.40
D1	16.15		16.95	S	6.00	6.10	6.30
E	15.20	15.70	16.20				

