JMF300KE07F4U

FRED Modules

Features

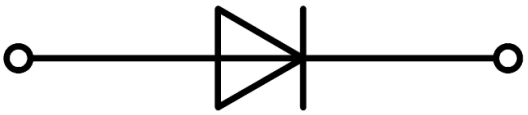
- Ultrafast reverse recovery time
- Low reverse recovery loss
- High surge current capability
- Soft reverse recovery characteristics
- Low forward voltage and leakage current

Product Summary

Parameter	Value	Unit
V_{RRM}	700	V
$I_{F(AV)}$	300	A
I_{FSM}(@ t_P = 10ms)	4100	A
V_F(Max)	1.80	V
T_{rr}(Typ)	88	ns

Applications

- Inversion welder
- Uninterruptible power supply and plating power supply
- Ultrasonic cleaner and welder
- Converter and chopper
- PFC



Absolute Maximum Ratings (@ T_C = 25°C unless otherwise specified)

Parameter	Conditions	Symbol	Values	Unit
Repetitive peak reverse voltage	T_{vj} = 25°C	V_{RRM}	700	V
Average on-state current	T_C = 100°C, per module	$I_{F(AV)}$	300	A
Forward surge current	Sine wave, tp=10mS, T_{vj}=45℃, per diode	I_{FSM}	4100	A
I^2t Value for fusing		I^2t	84050	A^2s
Junction temperature range		T_{vj}	-40 - 150	℃
Storage temperature range		T_{stg}	-40 - 125	℃

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Electrical Characteristics (@ T_C = 25°C unless otherwise specified)

Parameter	Conditions	Symbol	Values			Unit
			Min.	Typ.	Max.	
Forward voltage	I_F = 300A, T_{vj} = 25℃	V_F		1.30	1.80	V
	I_F = 300A, T_{vj} = 125℃			1.10	1.60	
Maximum reverse leakage current	V_R = V_{RRM}, T_{vj} = 25℃	I_{RRM}			0.5	mA
	V_R = V_{RRM}, T_{vj} = 125℃				5	
Maximum reverse recovery current	I_F=300A, V_R=350V, diF/dt=-200A/μs, T_{vj} =25℃	I_{RM}		11		A
	I_F=300A, V_R=350V, diF/dt=-200A/μs, T_{vj} =125℃			26		
Reverse recovery time	I_F=1A, V_R=30V, diF/dt=-200A/μs	t_{rr}		88		ns
	I_F=300A, V_R=350V, diF/dt=-200A/μs, T_{vj} =25℃			120		ns
	I_F=300A, V_R=350V, diF/dt=-200A/μs, T_{vj} =125℃			290		ns

Thermal Characteristics (@ T_C = 25°C unless otherwise specified)

Parameter	Conditions	Symbol	Values			Unit
			Min.	Typ.	Max.	
Thermal resistance, junction to case	per module	$R_{th(j-c)}$			0.11	K/W
Mounting torque	Base plate to heatsink screw M6	M	3.0		4.7	N·m
	Electrode to terminal screw M6		3.0		4.7	N·m

Ordering Information

Device	Marking	Package	Weight	Inner Box	Pre Carton
JMF300KE07F4U	JMF300KE07F4U	F4	133g/PCS	4PCS	48PCS

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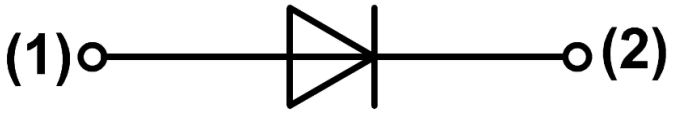
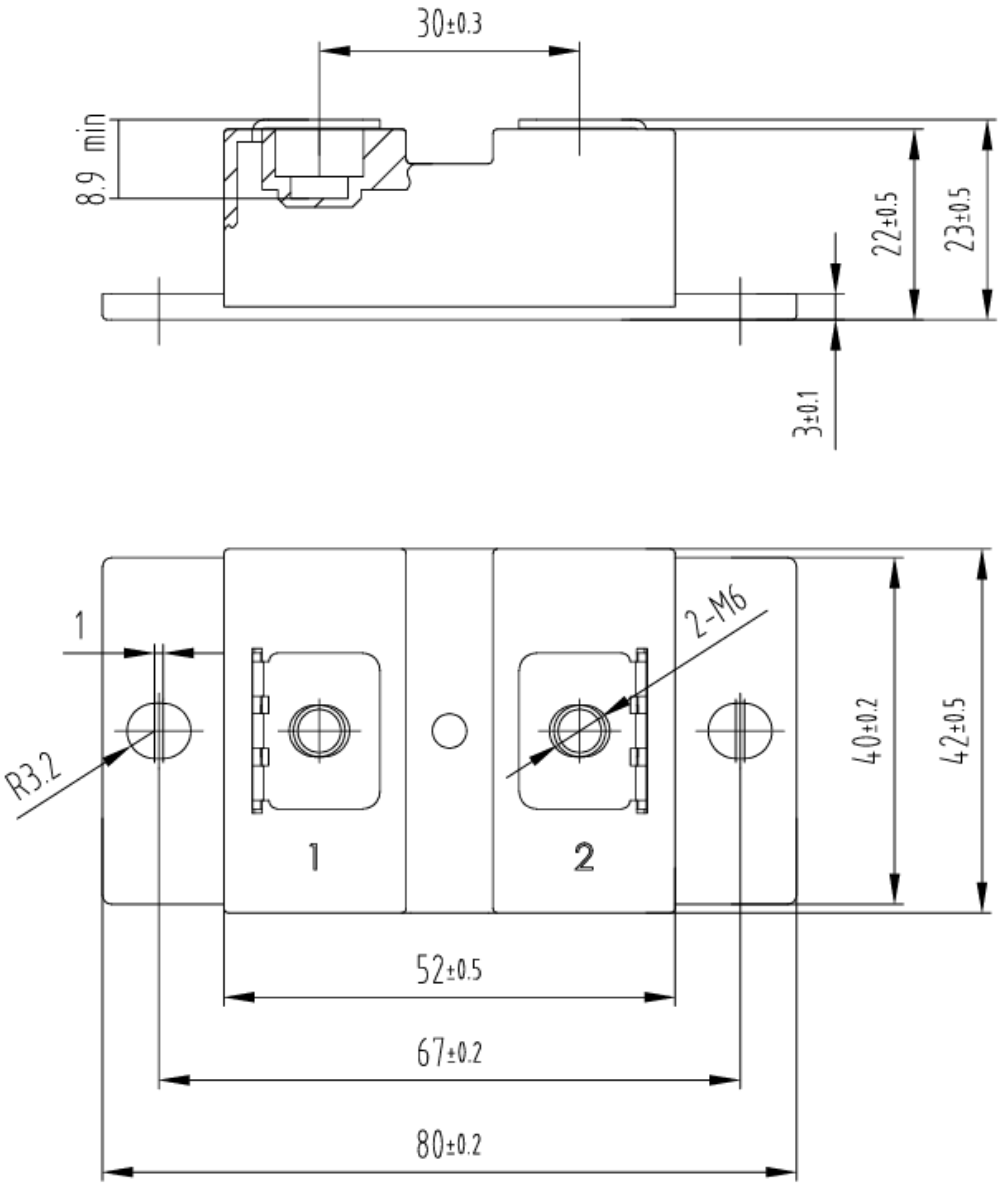
Circuit Diagram



Package Outlines (mm)



Unit of measurement: mm

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