

MKK400.04

FRED module

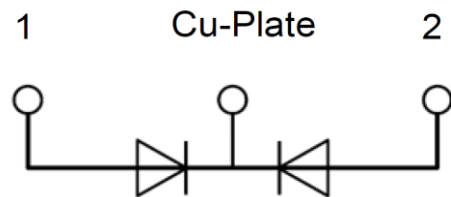
Features:

- Ultrafast reverse recovery time
- Soft reverse recovery characteristics
- Low reverse recovery loss
- Low forward voltage
- High surge current capability
- Low inductance package



Typical applications:

- Inversion welder
- Uninterruptible power supply (UPS)
- Plating power supply
- Ultrasonic cleaner and welder
- Converter & chopper
- Power factor correction (PFC) circuit



Symbol	Characteristics	Test Conditions	Value			Unit
			Min	Typ	Max	
V_R	Maximum DC reverse voltage				400	V
V_{RRM}	Maximum repetitive reverse voltage				400	V
$I_{F(AV)}$	Forward average current	$T_c = 110^\circ\text{C}$, per diode			200	A
		$T_c = 110^\circ\text{C}$, per module			400	A
$I_{F(RMS)}$	RMS forward current	$T_c = 110^\circ\text{C}$, per diode			280	A
I_{FSM}	Non-repetitive forward surge current	$T_j = 45^\circ\text{C}$, $t=10\text{ms}$, 50Hz, sine			2550	A
		$T_j = 45^\circ\text{C}$, $t=8.3\text{ms}$, 60Hz, sine			2800	A
$I^2 t$	$I^2 t$ for fusing coordination	$T_j = 45^\circ\text{C}$, $t=10\text{ms}$, 50Hz, sine			3251000	A^2s
		$T_j = 45^\circ\text{C}$, $t=8.3\text{ms}$, 60Hz, sine			3253000	A^2s
P_D	Power dissipation				1562	W
T_j	Operating Temperature		-40		+150	$^\circ\text{C}$
T_{stg}	Storage Temperature		-40		+125	$^\circ\text{C}$
F_M	Mounting torque - module to sink (M6)		3		5	N·m
	Mounting torque - module electrodes (M6)		3		5	N·m
$R_{th(j-c)}$	Thermal resistance junction to case				0.08	$^\circ\text{C/W}$
I_{RM}	Reverse leakage current	$V_R=400\text{V}$			0.5	mA
		$V_R=400\text{V}$, $T_j=125^\circ\text{C}$			10	mA
V_F	Forward voltage	$I_F=200\text{A}$		1.20	1.50	V
		$I_F=200\text{A}$, $T_j=125^\circ\text{C}$		1.00		V
t_{rr}	Reverse recovery time	$I_F=1\text{A}$, $di_F/dt=200\text{A}/\mu\text{s}$, $V_R=30\text{V}$		52		ns
t_{rr}	Reverse recovery time	$V_R=200\text{V}$, $I_F=200\text{A}$, $di_F/dt=200\text{A}/\mu\text{s}$, $T_j=25^\circ\text{C}$		75		ns
I_{RRM}	Max reverse recovery current	$T_j=25^\circ\text{C}$		7.5		A
t_{rr}	Reverse recovery time	$V_R=300\text{V}$, $I_F=300\text{A}$, $di_F/dt=200\text{A}/\mu\text{s}$, $T_j=125^\circ\text{C}$		140		ns
I_{RRM}	Max reverse recovery current	$T_j=125^\circ\text{C}$		15		A
W_t	Weight			92		g
Outline	M1B					

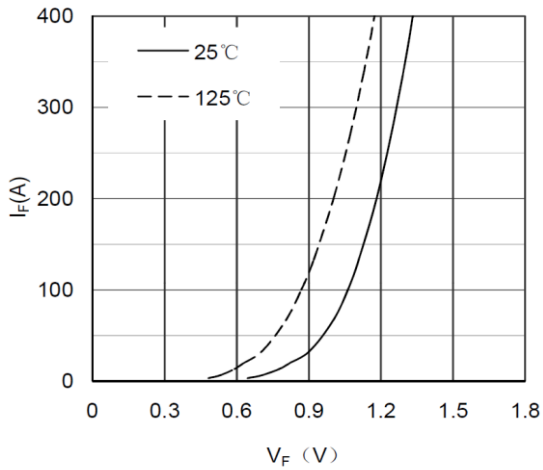


Figure 1. Forward Voltage Drop vs Forward Current

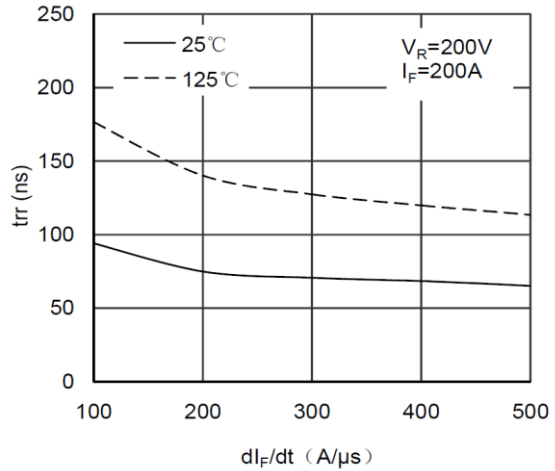


Figure 2. Reverse Recovery Time vs di_F/dt

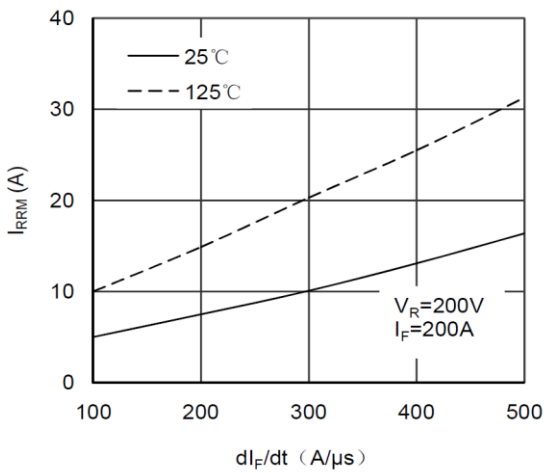


Figure 3. Reverse Recovery Current vs di_F/dt

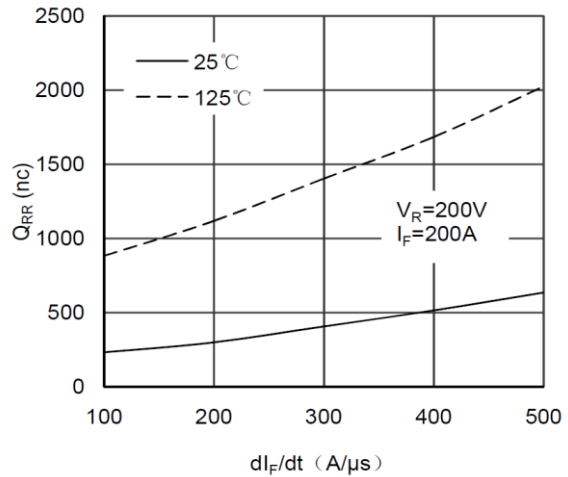


Figure 4. Reverse Recovery Charge vs di_F/dt

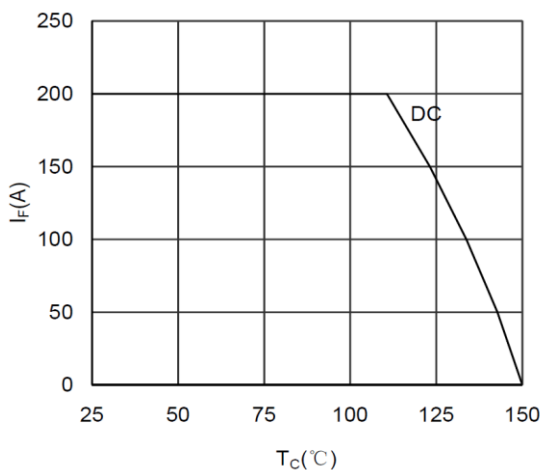


Figure 5. Forward current vs Case temperature

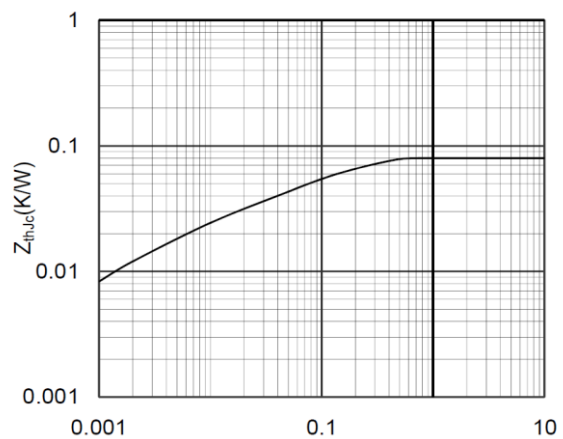


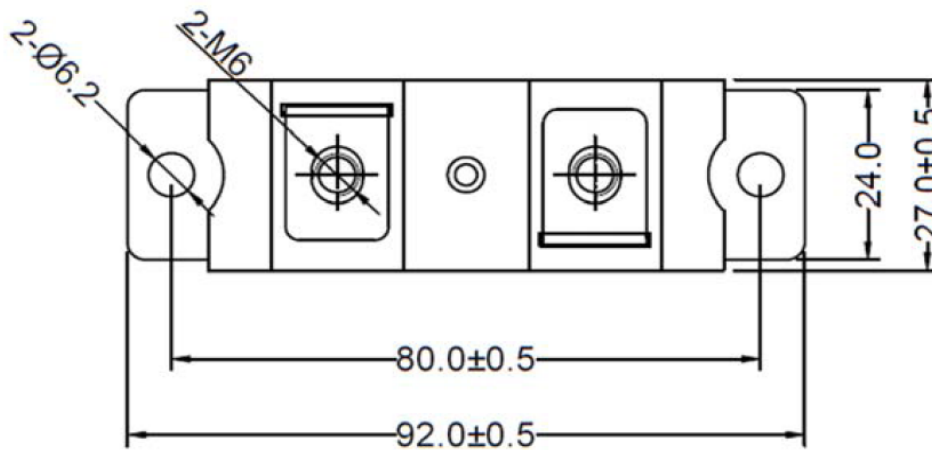
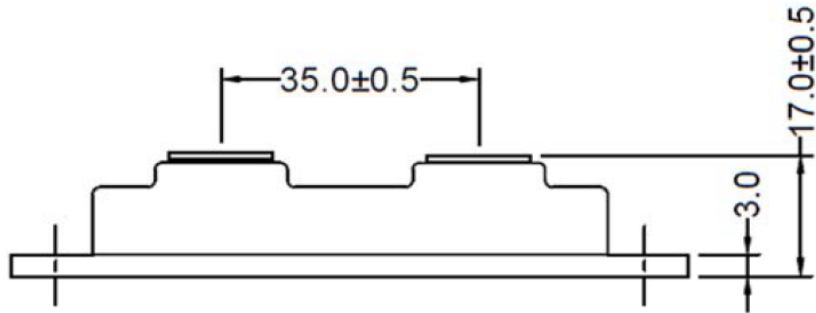
Figure 6. Transient Thermal Impedance

S.CO.M.E.S. Srl

Via Enrico Mattei, 6/8 - 26283 - Castiglione d'Adda (LO) - Italy

Phone: +39 0377 901243 Fax: +39 0377 900206

Scomes Srl reserves the right to change any specification without notice



(dimensions in mm)

S.CO.M.E.S. Srl

Via Enrico Mattei, 6/8 - 26283 - Castiglione d'Adda (LO) - Italy

Phone: +39 0377 901243 Fax: +39 0377 900206

Scomes Srl reserves the right to change any specification without notice