CMDU400M/CNDU400M/CMDU400IM/CDNU400IM - 06

CE High Power Products

Super Fast Recovery Diode ,400A

Features

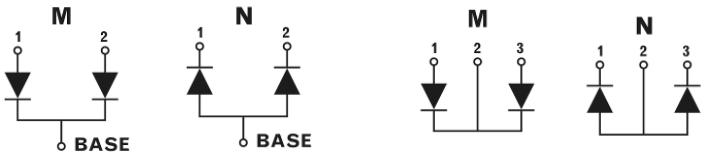
- International standard package with DCB ceramic base plate
- Dual Diode construction
- Low Leakage Current
- Low forward voltage drop
- High surge current capability
- Super Fast Switching

Typical Applications

- Antiparallel diode for high frequency switching devices
- Free wheeling diode in converters and motor control circuits
- Inductive heating and melting
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

M2 Package **M3 Package**

TO-244M (non-insulated) TO-244IM (insulated)



Maximum Ratings				
Parameter	**Symbol**	**Test Conditions**	**Values**	**Unit**
Repetitive peak reverse voltage	V_{RRM}		600	V
RMS reverse voltage	V_{RMS}		420	V
DC blocking voltage	V_{DC}		600	V
Average forward current	$I_{F(AV)}$	TC≤120˚C	400	A
Non-repertitive forward surge current,half sine-wave	I_{FSM}	TC=25˚C	2700	A

Electrical Specifications				
Parameter	**Symbol**	**Test Conditions**	**Values**	**Unit**
DC forward voltage	V_F	I_F=100A T_J=25˚C	1.2	V
Maximum DC reverse current	I_R	V_R=Rated V_{RRM} T_J=25˚C	20	uA
		V_R=Rated V_{RRM} T_J=125˚C	3	mA
Maximum Reverse Recovery Time	trr	I_F=0.5A，I_R=1A，I_{RR}=0.25A	180	ns
Reverse recovery charge(Area Under the curve Defined by IRRM And trr)	Qrr	V_{DD}=300V，I_F=200A，dif/dt=200A/us; T_J=25˚C	-	nc
Diode Peak Reverse Recovery Current	I_{RRM}		16	A
S=tb/ta	S		0.6	

Thermal - Mechanical Specifications					
Parameter		**Symbol**	**Test Conditions**	**Values**	**Unit**
Thermal resistance junction to case(M2/M3)		R_{thjc}	Per diode	0.14/0.35	˚C/W
Junction and storage temperature range		T_J, T_{stg}		-40 to 150	˚C
Mounting Torque		Mt	To terminals(M6)	4±15%	Nm
		Ms	To heatsink(M6)	5±15%	
Module(Approximately)		Weight		85	g
Maximum RMS insulation voltage (for insulated type)	M3 (Insulated)	Visol	Ac.50Hz；R.M.S；1min	2500	V
			Ac.50Hz；R.M.S；1sec	3500	

Performance Curves

Fig.1 Forward Current vs Forward Voltage

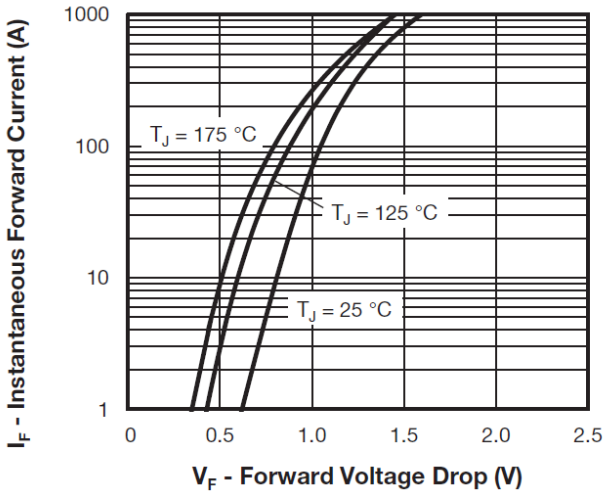


Fig.2 Reverse Current vs Reverse Voltage

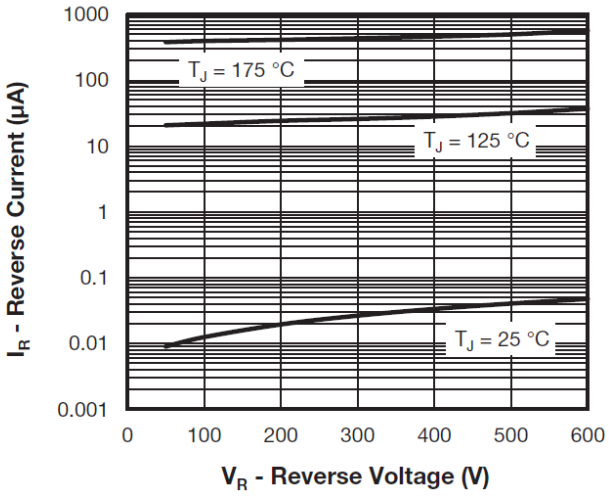


Fig.3 Reverse Recovery Parameter Test Circuit

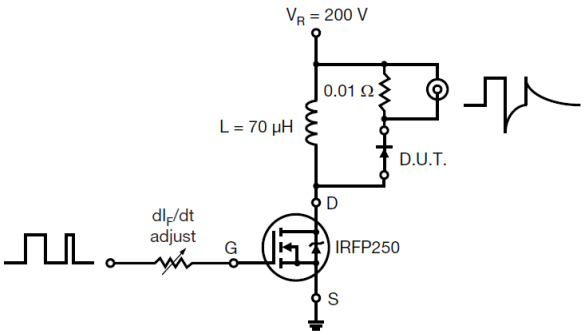
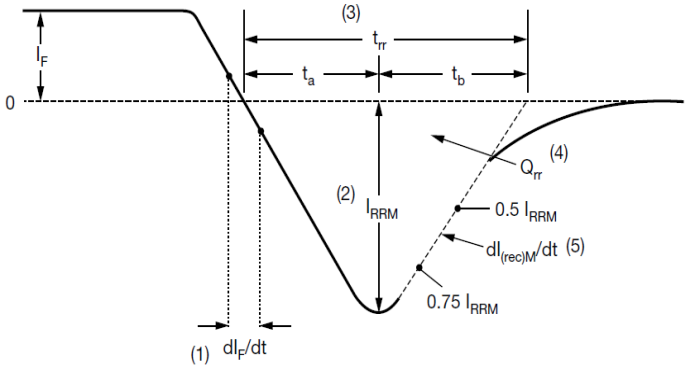


Fig.4 Reverse Recovery Waveform and Definitions



(1) dI_F/dt - rate of change of current through zero crossing

(2) I_{RRM} - peak reverse recovery current

(3) t_{rr} - reverse recovery time measured from zero crossing point of negative going I_F to point where a line passing through 0.75 I_{RRM} and 0.50 I_{RRM} extrapolated to zero current.

(4) Q_{rr} - area under curve defined by t_{rr} and I_{RRM}

$$Q_{rr} = \frac{t_{rr} \times I_{RRM}}{2}$$

(5) $dI_{(rec)M}/dt$ - peak rate of change of current during t_b portion of t_{rr}

Ordering Information Tabel

Device code

C M DU 400 I M - 06

CE's power module

"M" = common Cathode configuration
"N" = common Anode configuration

DS for Schottky Barrier Diode

Maximum average forward current, A

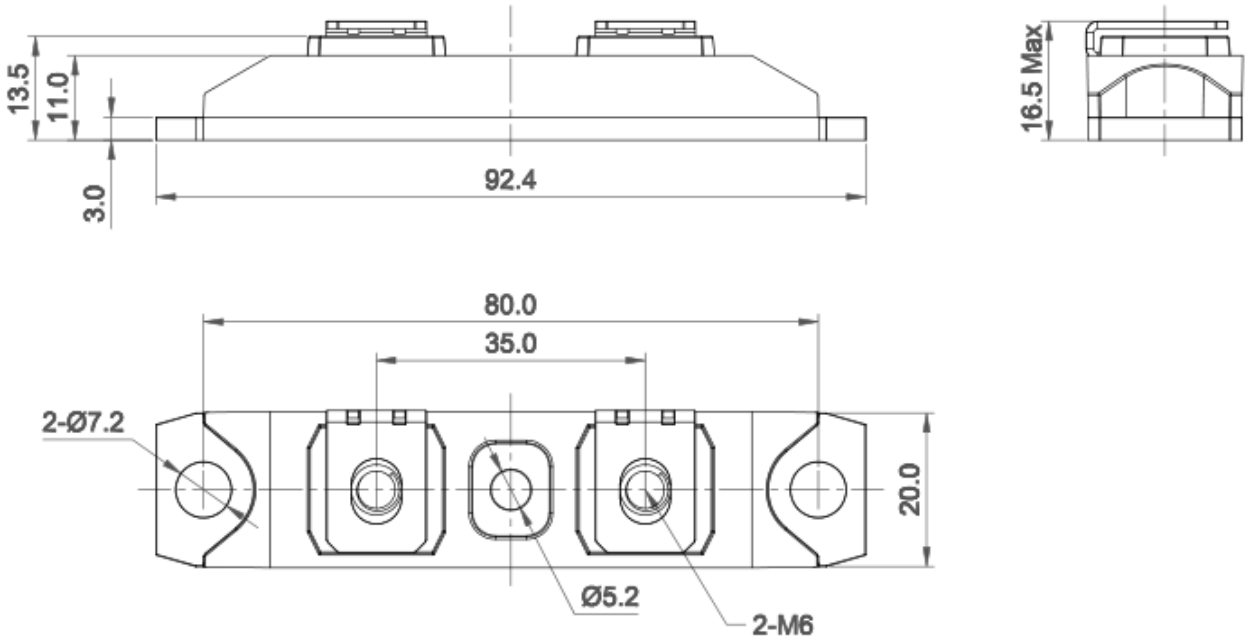
I =Insulated Package

M =Molding

Voltage rating (06 = 600V)

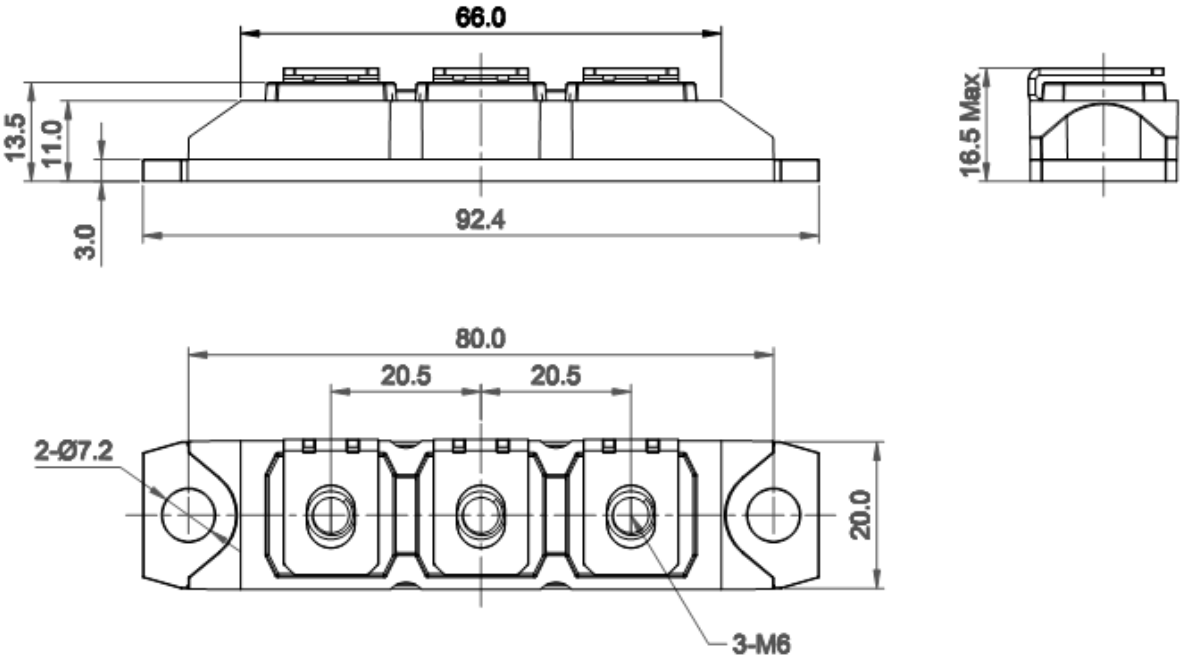
Package Outline Information

M2 Package



Dimensions in mm

M3 Package



Dimensions in mm