FGR3000CV-90DA

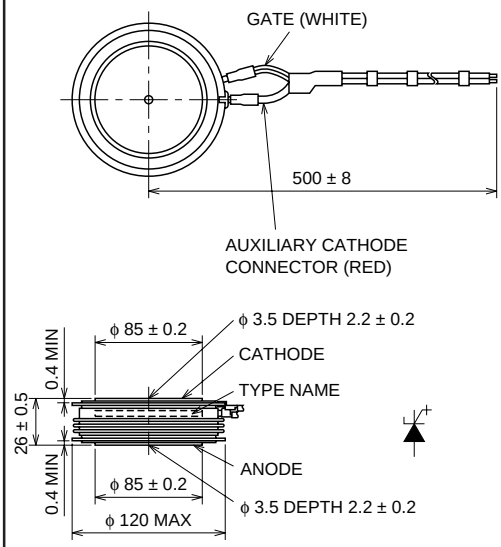
HIGH POWER INVERTER USE
PRESS PACK TYPE

FGR3000CV-90DA



- I_{TQRM} Repetitive controllable on-state current 3000A
- $I_{T(AV)}$ Average on-state current 900A
- V_{DRM} Repetitive peak off state voltage 4500V
- Reverse conducting type

OUTLINE DRAWING Dimensions in mm



APPLICATION

Inverters, D.C. choppers, Induction heaters, D.C. to D.C. converters.

MAXIMUM RATINGS

Symbol	Parameter	Voltage class	Unit
		90DA	
V_{DRM}	Repetitive peak off-state voltage*	4500	V
V_{DSM}	Non-repetitive peak off-state voltage*	4500	V
$V_{D(DC)}$	DC off-state voltage*	2500	V

* : V_{GK} = –2V

Symbol	Parameter	Conditions	Ratings	Unit
I_{TQRM}	Repetitive controllable on-state current	V_{DM} = 3375V, T_j = 125°C, C_S = 3.5μF, L_S = 0.2μH	3000	A
$I_{T(RMS)}$	RMS on-state current		1410	A
$I_{T(AV)}$	Average on-state current	f = 60Hz, sine wave θ = 180°, T_f = 70°C	900	A
I_{TSM}	Surge (non-repetitive) on-state current	One half cycle at 60Hz	18	kA
I_T^2t	I^2t for fusing	One cycle at 60Hz	1.3×10^6	A^2s
$I_{R(RMS)}$	RMS Reverse current		1100	A
$I_{R(AV)}$	Average reverse current	f = 60Hz, sine wave θ = 180°, T_f = 70°C	700	A
I_{RSM}	Surge (non-repetitive) reverse current	One half cycle at 60Hz	22	kA
I_R^2t	Current-squared, time integration	One cycle at 60Hz	2.0×10^6	A^2s
di_T/dt	Critical rate of rise of on-state current	V_D = 2250V, I_{GM} = 40A, T_j = 125°C	500	A/μs
V_{FGM}	Peak forward gate voltage		10	V
V_{RGM}	Peak reverse gate voltage		18	V
I_{FGM}	Peak forward gate current		100	A
I_{RGM}	Peak gate reverse current		900	A
P_{FGM}	Peak forward gate power dissipation		400	W
P_{RGM}	Peak reverse gate power dissipation		27	kW
$P_{FG(AV)}$	Average forward gate power dissipation		100	W
$P_{RG(AV)}$	Average reverse gate power dissipation		230	W
T_j	Junction temperature		–40 ~ +125	°C
T_{stg}	Storage temperature		–40 ~ +150	°C
—	Mounting force required	Recommended value 37	31 ~ 43	kN
—	Weight	Standard value	1450	g

MITSUBISHI ELECTRIC

FGR3000CV-90DA

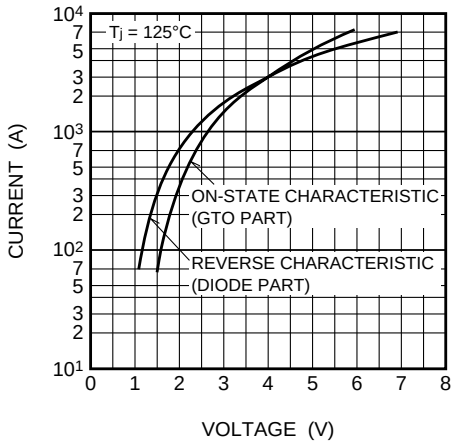
HIGH POWER INVERTER USE
PRESS PACK TYPE

ELECTRICAL CHARACTERISTICS

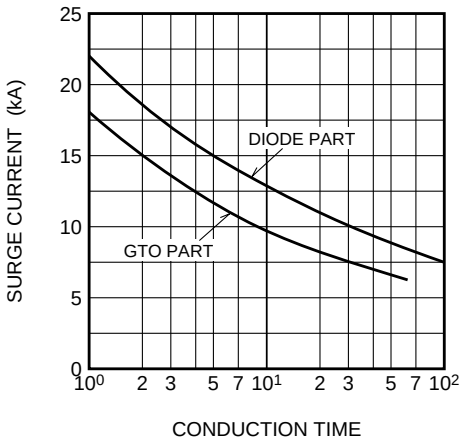
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V_{TM}	On-state voltage	T_j = 125°C, I_{TM} = 3000A, Instantaneous measurment	—	—	4.0	V
V_{RM}	Peak reverse voltage drop	T_j = 125°C, I_{RM} = 3000A, Instantaneous measurment	—	—	4.0	V
I_{DRM}	Repetitive peak off-state current	T_j = 125°C, V_{DRM} Applied, V_{GK} = –2V	—	—	200	mA
I_{RG}	Reverse gate current	T_j = 125°C, V_{RG} = 17V	—	—	250	mA
dv/dt	Critical rate of rise of off-state voltage	T_j = 125°C, V_D = 2250V, V_{GK} = –2V	1000	—	—	V/µs
t_{gt}	Turn-on time	T_j = 125°C, I_{TM} = 3000A, I_{GM} = 40A, V_D = 2250V	—	—	10	µs
t_{gq}	Turn-off time	T_j = 125°C, I_{TM} = 3000A, V_{DM} = 3375V, di_{GQ}/dt = –40A/µs V_{RG} = 17V, C_S = 3.5µF, L_S = 0.2µH	—	—	30	µs
I_{GQM}	Peak gate turn-off current		—	750	—	A
V_{GT}	Gate trigger voltage	DC METHOD : V_D = 24V, R_L = 0.1Ω, T_j = 25°C	—	—	1.5	V
I_{GT}	Gate trigger current		—	—	3000	mA
$R_{th(j-f)}$	Thermal resistance	GTO Side (Junction to fin)	—	—	0.016	°C/W
		Diode Side (Junction to fin)			0.025	

PERFORMANCE CURVES

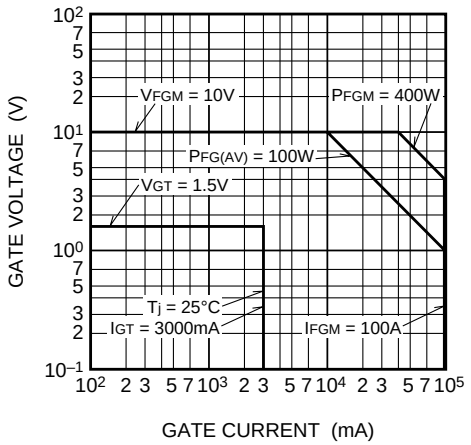
MAXIMUM ON-STATE AND MAXIMUM REVERSE CHARACTERISTICS



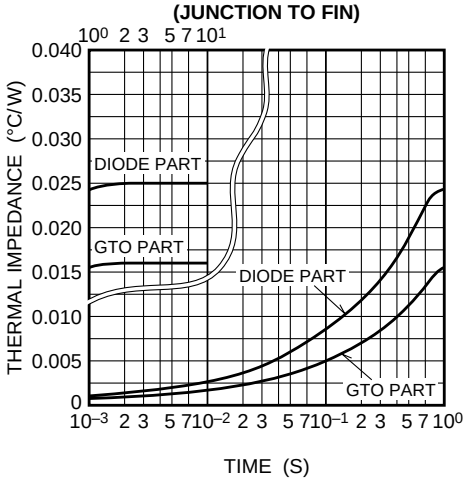
RATED ON-STATE AND REVERSE SURGE CURRENT



GATE CHARACTERISTICS



MAXIMUM THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO FIN)

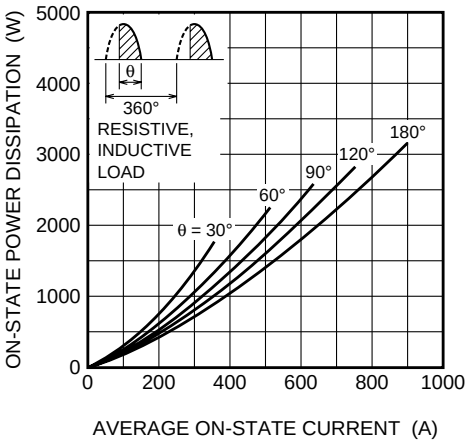


MITSUBISHI ELECTRIC

FGR3000CV-90DA

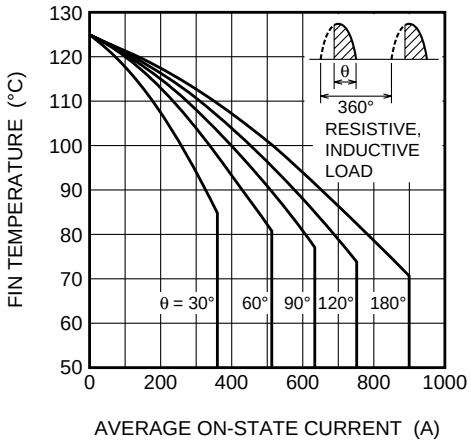
HIGH POWER INVERTER USE
PRESS PACK TYPE

MAXIMUM ON-STATE POWER DISSIPATION CHARACTERISTICS (GTO PART, SINGLE-PHASE HALF WAVE)



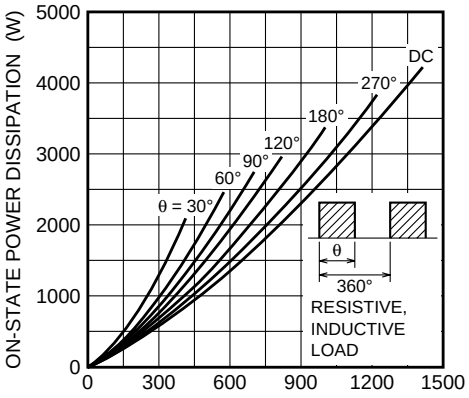
AVERAGE ON-STATE CURRENT (A)

ALLOWABLE FIN TEMPERATURE VS. AVERAGE ON-STATE CURRENT (GTO PART, SINGLE-PHASE HALF WAVE)



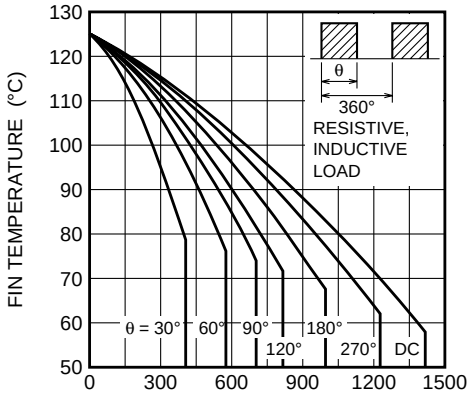
AVERAGE ON-STATE CURRENT (A)

MAXIMUM ON-STATE POWER DISSIPATION CHARACTERISTICS (GTO PART, RECTANGULAR WAVE)



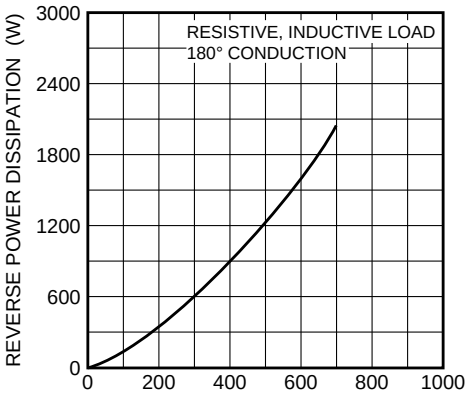
AVERAGE ON-STATE CURRENT (A)

ALLOWABLE FIN TEMPERATURE VS. AVERAGE ON-STATE CURRENT (GTO PART, RECTANGULAR WAVE)



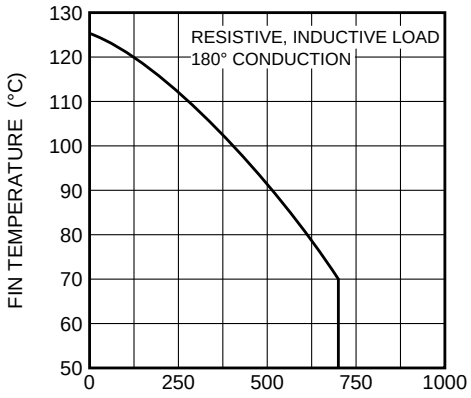
AVERAGE ON-STATE CURRENT (A)

MAXIMUM REVERSE POWER DISSIPATION CHARACTERISTIC (DIODE PART, SINGLE PHASE WAVE)



AVERAGE REVERSE CURRENT (A)

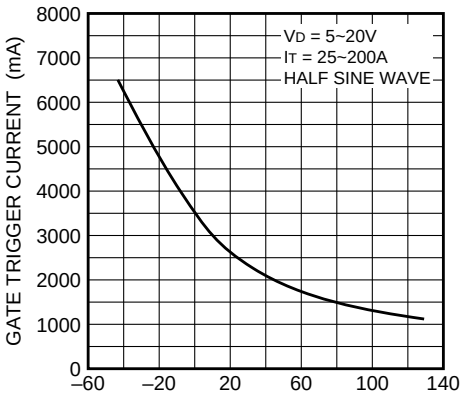
ALLOWABLE FIN TEMPERATURE VS. AVERAGE REVERSE CURRENT (DIODE PART, SINGLE PHASE HALF WAVE)



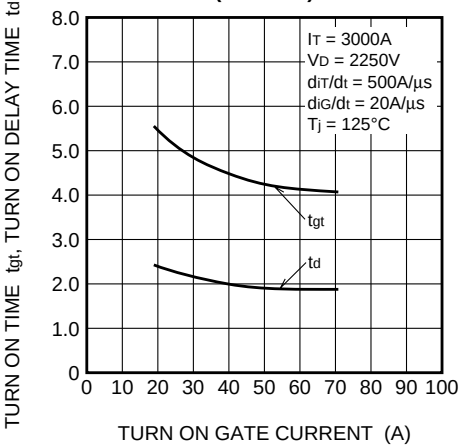
AVERAGE REVERSE CURRENT (A)

MITSUBISHI ELECTRIC

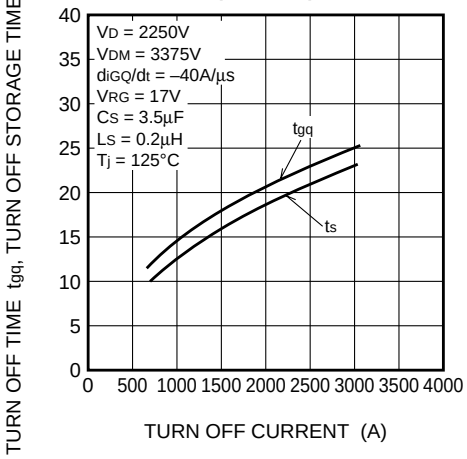
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



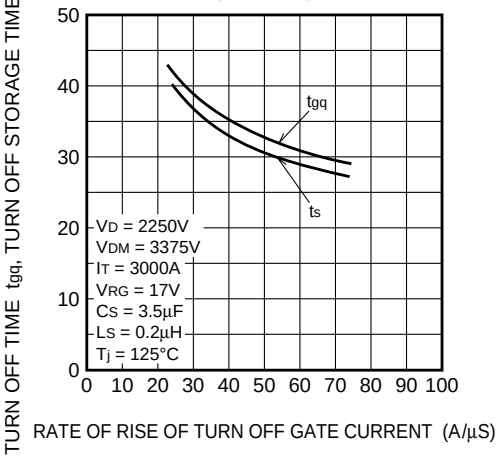
TURN ON TIME, TURN ON DELAY TIME VS. TURN ON GATE CURRENT (TYPICAL)



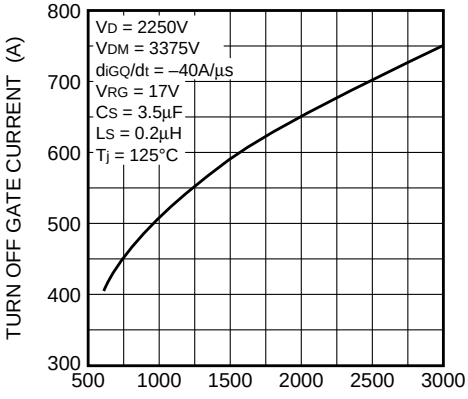
TURN OFF TIME, TURN OFF STORAGE TIME VS. TURN OFF GATE CURRENT (TYPICAL)



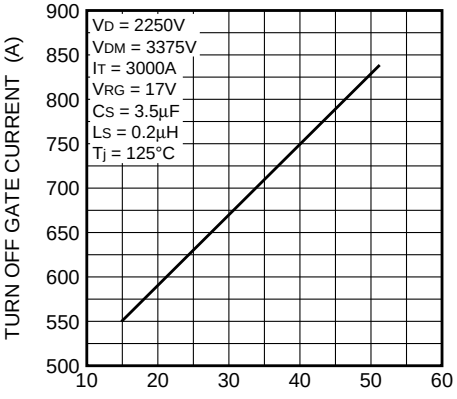
TURN OFF TIME, TURN OFF STORAGE TIME VS. RATE OF RISE OF TURN OFF GATE CURRENT (TYPICAL)



TURN OFF GATE CURRENT VS. TURN OFF CURRENT (TYPICAL)



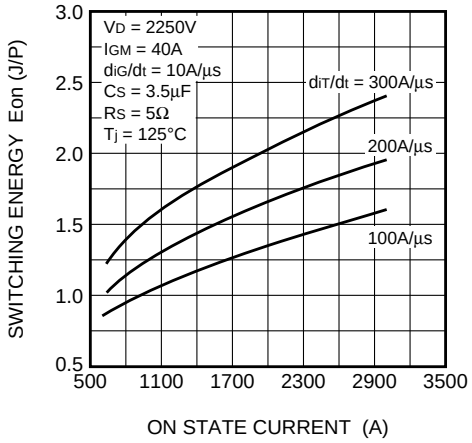
TURN OFF GATE CURRENT VS. RATE OF RISE OF GATE CURRENT (TYPICAL)



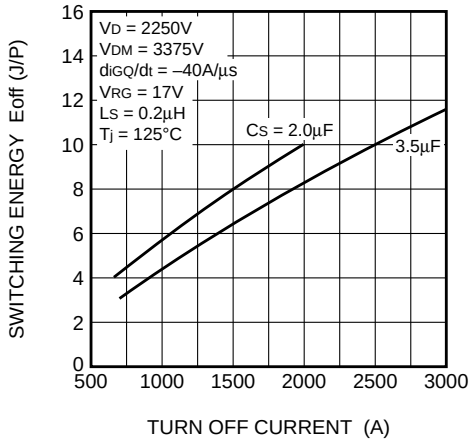
FGR3000CV-90DA

HIGH POWER INVERTER USE
PRESS PACK TYPE

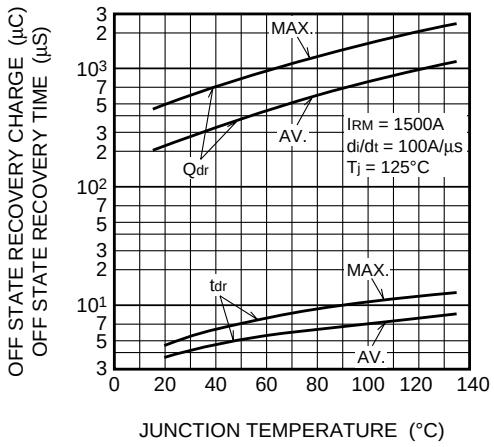
TURN ON SWITCHING ENERGY (MAXIMUM)



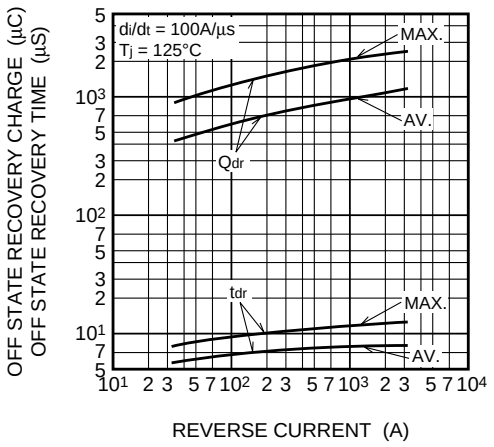
TURN OFF SWITCHING ENERGY (MAXIMUM)



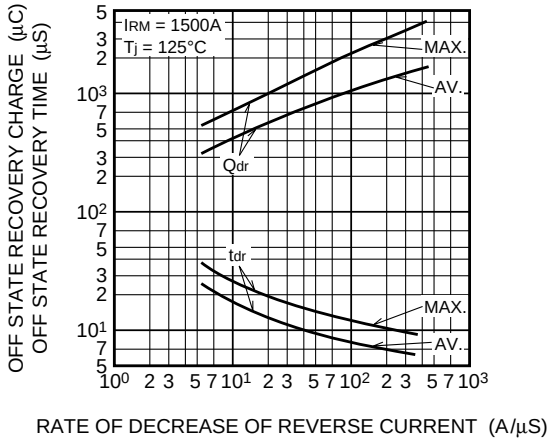
OFF STATE RECOVERY CHARGE, OFF STATE RECOVERY TIME VS. JUNCTION TEMPERATURE



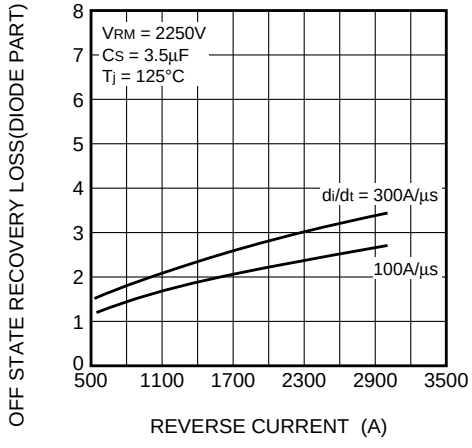
OFF STATE RECOVERY CHARGE, OFF STATE RECOVERY TIME VS. REVERSE CURRENT



OFF STATE RECOVERY CHARGE, OFF STATE RECOVERY TIME VS. RATE OF DECREASE OF REVERSE CURRENT



OFF STATE RECOVERY LOSS(DIODE PART) VS. REVERSE CURRENT (TYPICAL)



MITSUBISHI ELECTRIC

Стандарт Электрон Связь

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

Наши контакты:

Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

Адрес: 198099, Санкт-Петербург, Промышленная ул, дом № 19, литера Н, помещение 100-Н Офис 331