IGBT MODULE

GSA300AA120

UL;E76102 (M)

SanRex IGBT Module **GSA300AA120** is designed for high speed, high current switching applications. This Module is electrically isolated and with a fast switching, soft recovery diode (trr=0.1 μs) reverse connected across each IGBT.

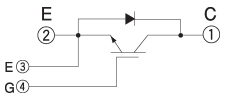
- Ic=300A VCES=1200V
- VCE (sat) =3.0V Typ
- tf =0.10 μs Typ
- Soft recovery diode

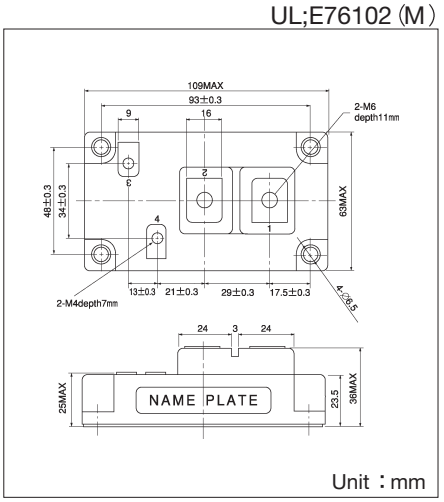
(Applications)

Inverter for motor control (VVVF)

UPS, AC servo

DC power supply, Welder





Unit : mm

■Maximum Ratings

(Unless otherwise Tj=25℃)

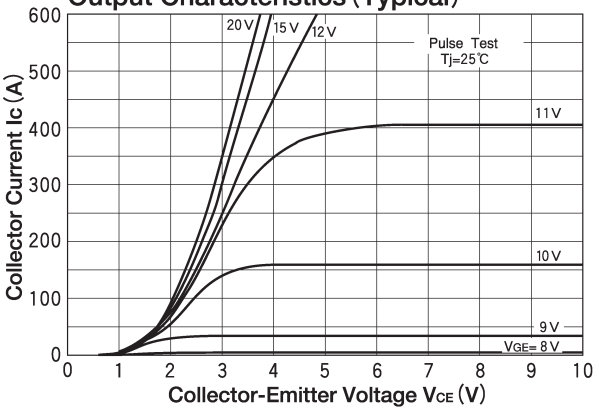
Symbol	Item		Conditions	Ratings GSA300AA120	Unit
VCES	Collector-Emitter Voltage		with gate terminal shorted to emitter	1200	V
VGES	Gate-Emitter Voltage		with collector shorted to emitter	±20	V
Ic	Collector Current	DC		300	A
ICP		Pulse (1 ms)		600	
−Ic	Reverse Collector Current			300	A
PT	Total Power Dissipation		Tc=25℃	2100	W
Tj	Junction Temperature			150	℃
Tstg	Storage Temperature			−40～+125	℃
VISO	Isolation Voltage (R.M.S.)		A.C. 1 minute	2500	V
	Mounting Torque	Mounting (M6)	Recommended Value 2.5～3.9	4.7	N·m
			Recommended Value 25～40	48	kgf·cm
		Main Terminal (M6)	Recommended Value 2.5～3.9	4.7	N·m
			Recommended Value 25～40	48	kgf·cm
		Terminal (M4)	Recommended Value 1.0～1.4	1.5	N·m
			Recommended Value 10～14	15	kgf·cm
	Mass		Typical Value	400	g

■Eiectrical Characteristics

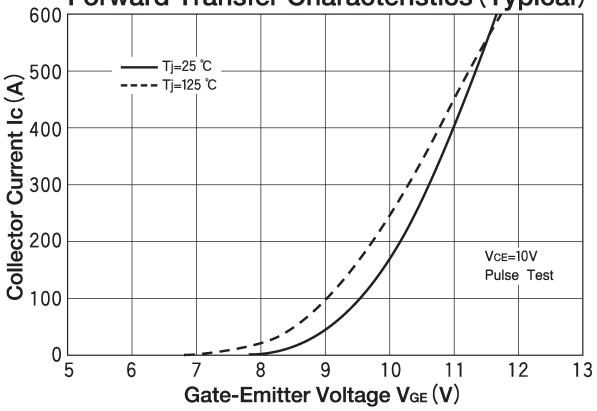
(Unless otherwise Tj=25℃)

Symbol	Item		Conditions	Ratings Min.	Ratings Typ.	Ratings Max.	Unit
IGES	Gate Leakage Current		VGE=±20V, VCE=0V			±500	nA
ICES	Collector Cut-Off Current		VCE=1200V, VGE=0V			1.0	mA
V(BR)CES	Collector-Emitter Breakdown Voltage		VGE=0V, Ic=1mA	1200			V
VGE(th)	Gate Threshold Voltage		VCE=10V, Ic=30mA	4.5		7.5	V
VCE(sat)	Collector-Emitter Saturation Voltage		Ic=300A, VGE=15V		3.0	3.4	V
Cies	Input Capacitance		VCE=10V, VGE=0V, f=1MHz		35	60	nF
tr	Switching Time	Rise Time	Ic=300A, VGE=+15V/−5V Vcc=600V, RG=1.0Ω		0.10	0.25	μs
td (on)		Turn-on Delay Time			0.15	0.35	
tf		Fall Time			0.10	0.35	
td (off)		Turn-off Delay Time			0.30	0.60	
VECS	Emitter-Collector Voltage		−Ic=300A, VGE=0V		2.50	3.50	V
trr	Reverse Recovery Time		−Ic=300A, VGE=−10V, di/dt=600A/μs		0.15	0.25	μs
Rth (j-c)	Thermal Resistance		IGBT-Case			0.06	℃/W
			Diode-Case			0.15	

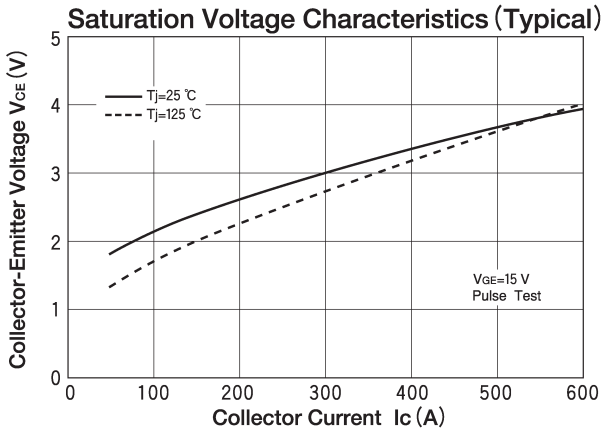
Output Characteristics (Typical)



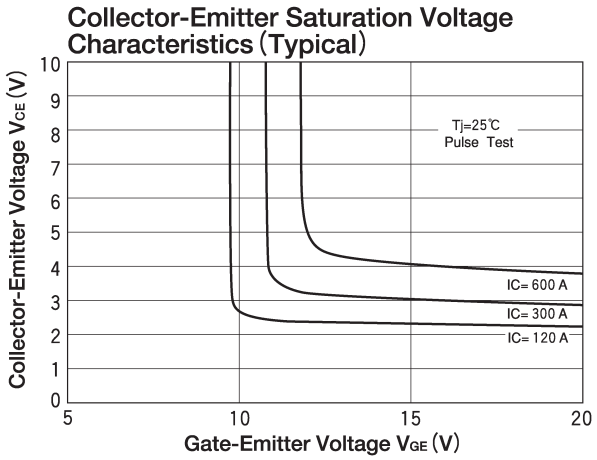
Forward Transfer Characteristics (Typical)



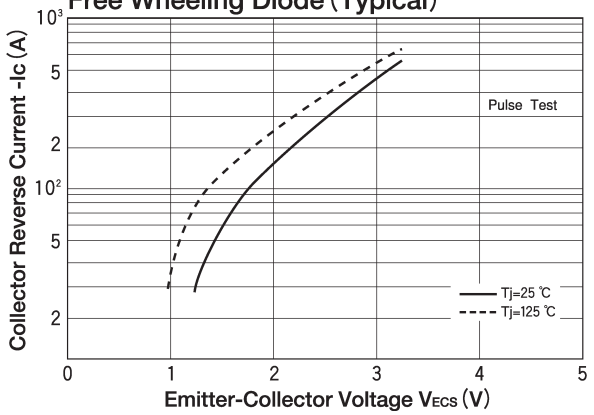
Saturation Voltage Characteristics (Typical)



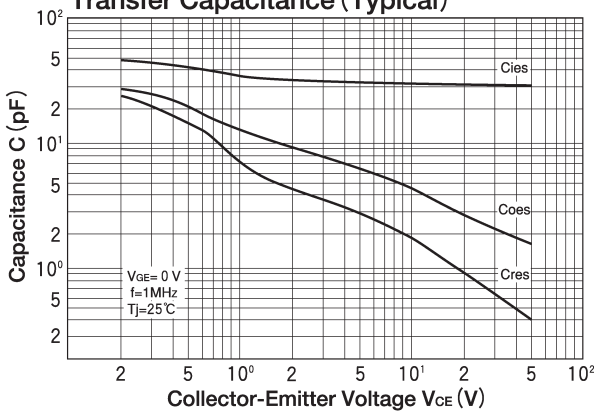
Collector-Emitter Saturation Voltage Characteristics (Typical)



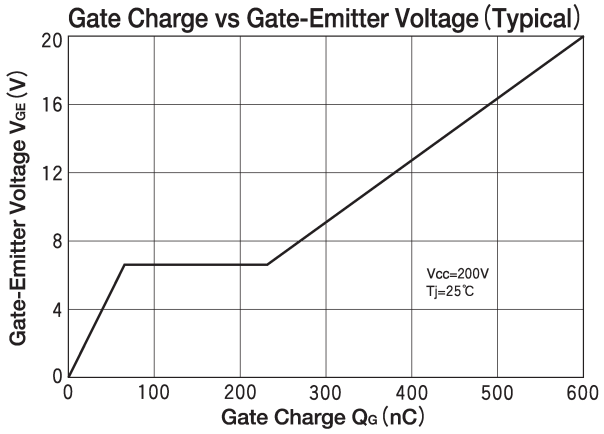
Forward Voltage of Free Wheeling Diode (Typical)



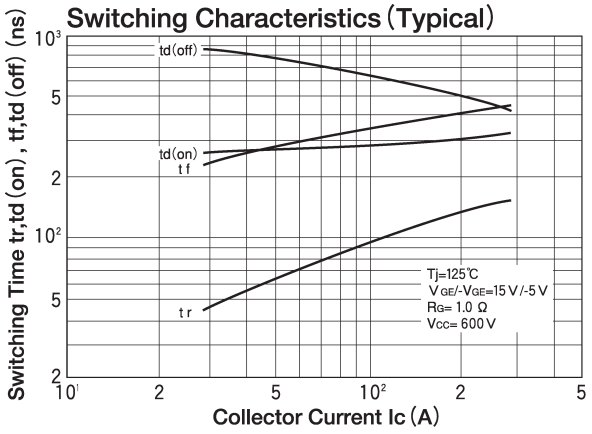
Input Capacitance, Output Capacitance, Transfer Capacitance (Typical)



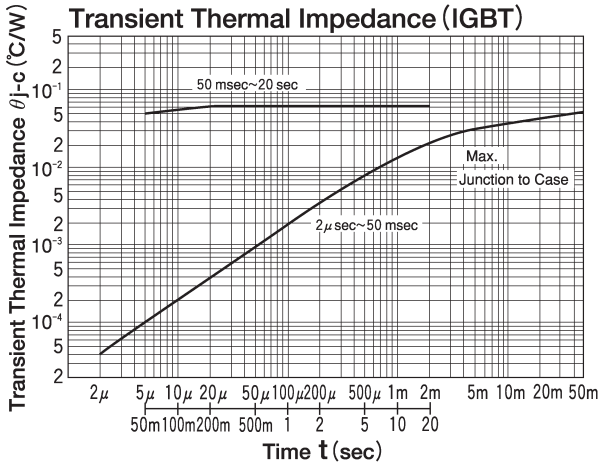
Gate Charge vs Gate-Emitter Voltage (Typical)



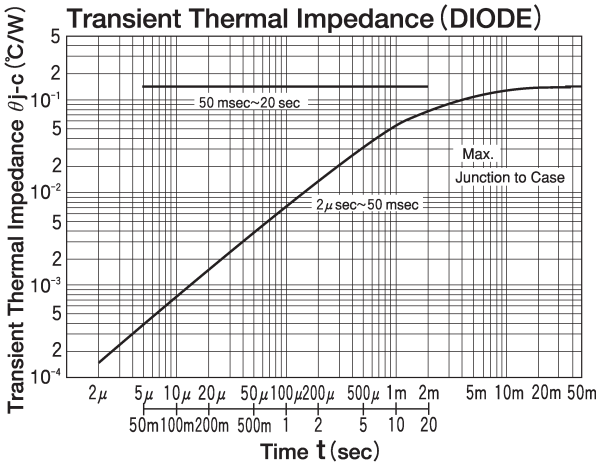
Switching Characteristics (Typical)



Transient Thermal Impedance (IGBT)



Transient Thermal Impedance (DIODE)



Reverse Recovery Characteristics of Free-Wheel Diode (Typical)