

XI'AN IR-PERI



Company

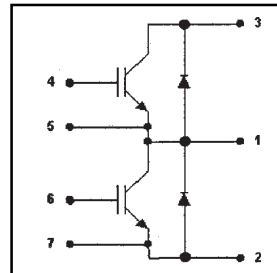
PRELIMINARY

GA200TF60K

“ HALF-BRODGE” IGBT DOUBLE INT-A -PAK

Features

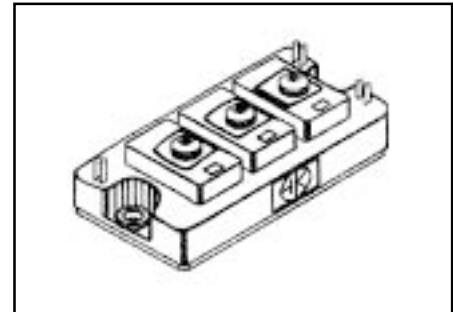
- GEN5 NPT Technology
- Low Vce(on)
- 10us Short Circuit Capability
- Square RBSOA
- Positive Vce(on) Temperature Coefficient
- HEXFRED™ antiparallel diodes with ultra- soft recovery
- Industry standard package



V_{CES}=600V
 V_{CE(on) typ.}=1.70V
 @V_{GE}=15V,I_c=150A

Benefits

- Increased operating efficiency
- Rugged Transient Performance
- Performance optimized for power conversion: UPS, SMPS, Welding;Benchmark Efficiency for Motor Control Applications
- Excellent Current Sharing in Parallel Operation
- Lower EMI, requires less snubbing



Absolute Maximum Ratings

Parameter		Max.	Units
V _{CES}	Collector- to- Emitter Voltage	600	V
I _{c @ Tc=25°C}	Continuous Collector Current	200	
I _{c @ Tc=85°C}	Continuous Collector Current	200	
I _{CM}	Pulsed collector Current	400	A
I _{LM}	Peak switching Current	400	
I _{FM}	Peak Diode Forward Current	400	
V _{GE}	Gate- to- Emitter Voltage	± 20	V
V _{ISOL}	RMS Isolation Voltage, Any Terminal To Case, t =1 min	2500	
P _{D @ Tc=25°C}	Maximum Power Dissipation	625	W
P _{D @ Tc=85°C}	Maximum Power Dissipation	325	
T _J	Operating Junction Temperature Range	-40 to +150	°C
T _{STG}	Storage Temperature Range	-40 to +125	

Thermal / Mechanical Characteristics

Parameter		Typ.	Max.	Units
R _{θJC}	Thermal Resistance, Junction-to- Case- IGBT	-	0.20	°C/W
R _{θJC}	Thermal Resistance, Junction-to- Case- Diode	-	0.35	
R _{θCS}	Thermal Resistance, Case-to- Sink- Module	0.1		-
	Mouting Torque, Case-to-Heatsink	-	4.0	N.m
	Mouting Torque, Case-to-Terminal 1,2 & 3	-	3.0	
	Weight of Module	300	-	g

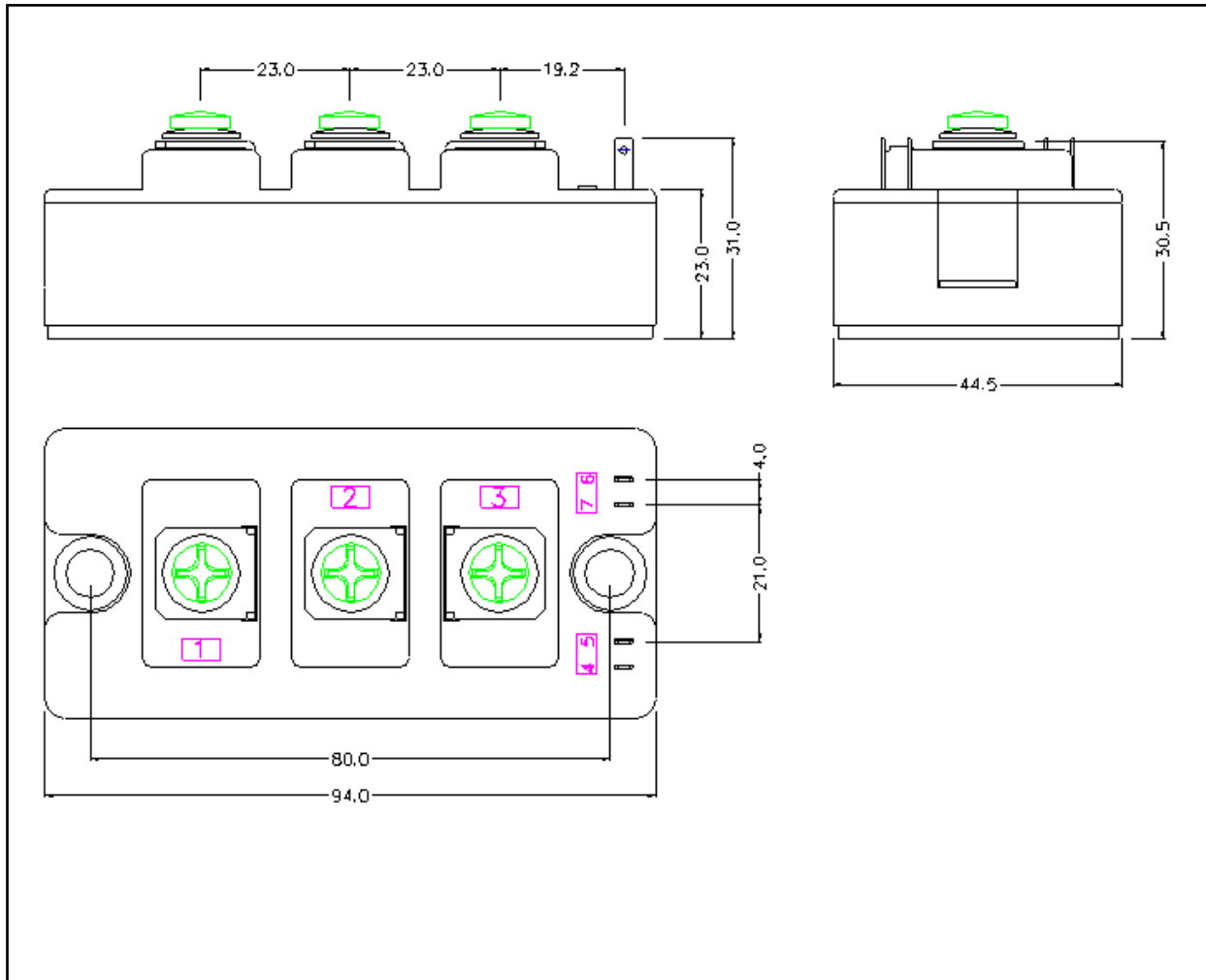
Electrical Characteristics @ T_J=25°C(unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
V _{(BR)CES}	Collector-to-Emitter Breakdown Voltage	600	—	—	V	V _{GE} =0V, I _C =1mA
V _{CE(ON)}	Collector-to-Emitter Voltage	—	1.8	—		V _{GE} =15V, I _C =200A
		—	1.8	—		V _{GE} =15V, I _C =200A, T _J =125°C
V _{GE(th)}	Gate Threshold Voltage	4.0	—	6.0		I _C =1.0mA
DV _{GE(th)DT_J}	Temperature Coeff. of Threshold Voltage	—	—	—	mV/°C	V _{CE} =V _{GE} , I _C =0.75mA
g _{fe}	Forward Transconductance	—	187	—	S	V _{CE} =V _{GE} , I _C =200A
I _{CES}	Collector - to - Emitter Leaking Current	—	—	1.0	mA	V _{GE} =0V, V _{CE} =600V
		—	—	2.0		V _{GE} =0V, V _{CE} =600V, T _J =125°C
V _{FM}	Diode Forward Voltage - Maximum	—	1.4	2.0	V	I _F =200A, V _{GE} =0V
		—	1.4	—		I _F =200A, V _{GE} =0V, T _J =125°C
I _{GES}	Gate - to - Emitter Leakage Current	—	—	250	nA	V _{GE} =± 20V

Dynamic Characteristics - T_J=125°C (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
Q _g	Total gate charge (turn - on)	—	820	930	nC	V _{CC} = 400V V _{GE} =15V I _C =200A T _J =25°C
Q _{ge}	Gate - Emitter charge (turn - on)	—	162	256		
Q _{gc}	Gate - Collector charge (turn - on)	—	380	640		
T _{d(on)}	Turn - On Delay Time	—	—	160	nS	R _{G1} =10Ω , R _{G2} = 0Ω I _C = 200A V _{CC} = 360V V _{GE} =± 15V
t _r	Rise Time	—	—	145		
T _{d(off)}	Turn - Off Delay Time	—	—	336		
t _f	Fall Time	—	—	287		
E _{on}	Turn - On Switching Energy	—	12	—	mJ	
E _{off(1)}	Turn - Off Switching Energy	—	20	—		
E _{ts(1)}	Total Switching Energy	—	32	33		
C _{ies}	Input Capacitance	—	—	29000	pF	V _{GE} = 0V V _{CC} = 30V f=1MHZ
C _{oes}	Output Capacitance	—	—	2100		
C _{res}	Reverse Transfer Capacitance	—	—	1100		
t _{rr}	Diode Reverse Recovery Time	—	—	140	nS	I _C = 200A
I _{rr}	Diode Peak Reverse Current	—	—	100	A	R _{G1} =27Ω
Q _{rr}	Diode Recovery Charge	—	4000	—	nC	R _{G2} =0Ω
di(rec)M/dt	Diode Peak Rate of Fall of Recovery During t _b	—	4680	—	A/μs	V _{CC} =360V di/dt=1400A/μs

Case Outline



Dimensions are shown in millimeters

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