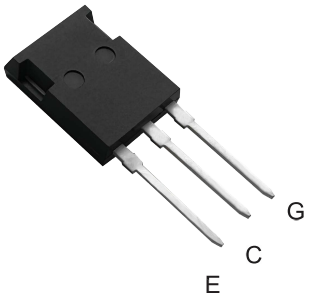
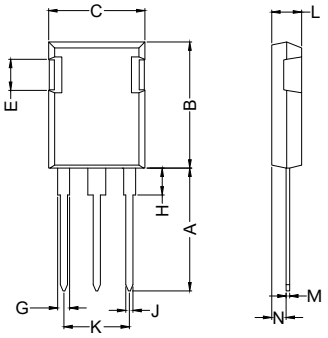
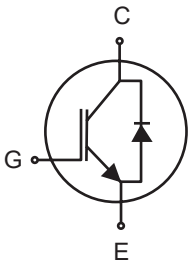
SG120T65UDB5

Discrete IGBTs





Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.620	0.640
E	4.32	5.49	0.170	0.216
F	5.4	6.3	0.213	0.248
G	1.65	2.13	0.065	0.084
H	3.80	4.5	0.150	0.177
J	1.0	1.4	0.039	0.055
K	10.8	11.1	0.425	0.437
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.059	0.098



G = Gate
C = Collector
E = Emitter
TAB = Collector

Symbol	Test Conditions	Value	Unit
V_{CES}	T_J=25°C to 150°C	650	V
V_{GES}		±20	V
I_C	T_C=25°C; limited by leads	240	A
	T_C=100°C	120	
RBSOA	V_{GE}=15V; T_{VJ}=125°C;R_G=5Ω, V_{CE}= 480V	300	A
P_D	T_C=25°C	500	W
T_J		-55 ~ +175	°C
T_{JM}		175	
T_{STG}		-55 ~ +150	
	Maximum Lead temperature for soldering 1.6mm (0.062 in.) from case for 10s	300	°C
	Maximum Tabk temperature for soldering SMD devices for 10s	260	°C
Md	Mounting Torque (M3)	1.13/10	Nm/ lb.in
Weight		6	g

www.sirectifier.com Tel: +86-519-86800000 Fax: +86-519-88019019 E-mail: sales@sirectifier.com

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Discrete IGBTs

Symbol	Test Conditions		Min	Typ.	Max	Unit
IGBT(TJ=25°C, unless otherwise speci ied)						
B_{VCES}	I_C = 1mA; V_{GE} = 0V		650			V
V_{GETH}	I_C = 250μA; V_{CE} = V_{GE}		4.4	5.2	6.0	V
I_{CES}	VCE=650V; V_{GE}=0V	T_J=25°C			250	μA
		T_J=125°C			4	mA
I_{GES}	V_{CE}=0V; V_{GE}=±20V				±200	nA
$V_{CE(SAT)}$	I_C=120A; V_{GE}=15V			1.90	2.40	V
C_{ies}	V_{CE}=25V; V_{GE}=0V; f=1MHz			5500		pF
C_{oes}				335		
C_{res}				55		
Q_g	I_C=120A; V_{GE}=15V; V_{CE}=520V			150		nC
Q_{ge}				30		
Q_{gc}				147		
$t_{d(on)}$	Inductive Load I_C=120A;V_{GE}=15V; V_{CE}=400V; $R_{G(ON)}$=$R_{G(OFF)}$=20Ω;			100		ns
t_r				180		ns
$t_{d(off)}$				260		ns
t_f				90		ns
E_{on}				7.1		mJ
E_{off}				7.8		mJ
R_{thJC}					0.25	K/W
R_{thJA}					40	K/W
Reverse Diode (FRED)						
V_F	I_F=120A; T_{VJ}=25°C			2.8	3.0	V
I_{RM}	V_R=400V; I_F=120A; -di$_F$/dt = 100A/μs L≤0.05μH; T_{VJ}=100°C			6		A
t_{rr}	I_F=1A; -di/dt=50A/μs; V_R=30V; T_J=25°C			75		ns
R_{thJC}					0.40	K/W

Features:

•Low Switching Losses
•Short circuit withstand time 5us
•Positive Temperature Coefiicient for easy paralleling
•MOS input, Voltage Controlled
•Ultrafast Free Wheeling Diodes

Application:

•UPS
•Welding Machines
•PFC applications

Advantages:

•Space and weight savings
•Reduced protection circuits

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