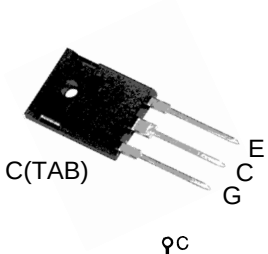
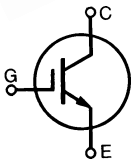
SG25S12T, SG25S12DT

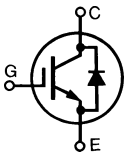
Discrete IGBTs



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

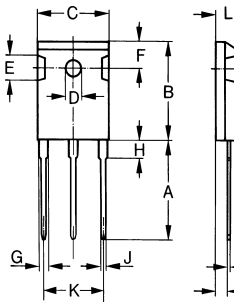


SG25S12T



SG25S12DT

Dimensions TO-247AD



Dim.	Millimeter Min.	Max.	Inches 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	0.610	0.640
D	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

Symbol	Test Conditions	Maximum Ratings	Unit
V_{CES} V_{CGR}	T_J=25°C to 150°C T_J=25°C to 150°C; R_{GE}=1 MΩ;	1200 1200	V
V_{GES} V_{GEM}	Continuous Transient	±20 ±30	V
I_{C25} I_{C90}	T_C=25°C T_C=90°C	46 25	A
SSOA (RBSOA)	V_{GE}=15V; T_{VJ}=125°C; R_G=25Ω Clamped inductive load, L=100uH	I_{CM}=48 @ 0.8 V_{CES}	A
P_C	T_C=25°C	313	W
T_J T_{JM} T_{stg}		-55...+150 150 -55...+150	°C
	Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10s	260	°C
M_d	Mounting torque (M3)	1.13/10	Nm/lb.in.
Weight		6	g

(T_J=25°C, unless otherwise specified)

Symbol	Test Conditions	Characteristic Values min.	typ.	max.	Unit
BV_{CES}	I_C=1500uA; V_{GE}=0V	1200			V
$V_{GE(th)}$	I_C=1000uA; V_{CE}=V_{GE}	3.0	4.0	5.0	V
I_{CES}	V_{CE}=1200V; T_J=25°C			350	uA
	V_{GE}=0V; T_J=150°C			1.4	mA
I_{GES}	V_{CE}=0V; V_{GE}=±20V			±100	nA
$V_{CE(sat)}$	I_C=I_{C90}; V_{GE}=15V			2.35	V

Sirectifier®

SG25S12T, SG25S12DT

Discrete IGBTs

(T_J=25°C, unless otherwise specified)

Symbol	Test Conditions	Characteristic Values			Unit
		min.	typ.	max.	
g_{ts}	I_C=25A; V_{CE}=20V Pulse test, t≤300us, duty cycle≤2%		20		S
C_{ies}			2150	2600	
C_{oes}	V_{CE}=25V; V_{GE}=0V; f=1MHz		160	190	pF
C_{res}			110	130	
Q_g			225	300	
Q_{ge}	I_C=25A; V_{GE}=15V; V_{CC}=960V		-	-	nC
Q_{gc}			-	-	
$t_{d(on)}$	Inductive load, T_J=25°C		45	60	ns
t_{ri}	I_C=25A; V_{GE}=15V/0V; L=180uH		40	52	ns
$t_{d(off)}$	V_{CC}=800V; R_G=R_{off}=22Ω		730	950	ns
t_{fi}	Remarks:Switching times may increase		30	39	ns
E_{off}	for V_{CE}(Clamp) > 0.8V_{CES}, higher T_J or increased R_G		1.5	2.0	mJ
$t_{d(on)}$	Inductive load, T_J=150°C		50	60	ns
t_{ri}	I_C=25A; V_{GE}=15V/0V; L=180uH		36	43	ns
E_{on}	V_{CC}=800V; R_G=R_{off}=22Ω		3.8	4.6	mJ
$t_{d(off)}$	Remarks:Switching times may increase		820	990	ns
t_{fi}	for V_{CE}(Clamp) > 0.8V_{CES}, higher T_J or		42	50	ns
E_{off}	increased R_G		2.9	3.8	mJ
R_{thJC}	IGBT			0.4	K/W
R_{thCK}				40	K/W

Reverse Diode (FRED)

(T_J=25°C, unless otherwise specified)

Symbol	Test Conditions	Characteristic Values			Unit
		min.	typ.	max.	
V_F	I_F=30A; T_{VJ}=150°C			2.2	V
	T_{VJ}=25°C			2.55	
I_{RM}	V_R=540V; I_F=30A; -di$_F$/dt=240A/us L≤0.05uH; T_{VJ}=100°C		16	18	A
t_{rr}	I_F=1A; -di/dt=100A/us; V_R=30V; T_{VJ}=25°C		40	60	ns
R_{thJC}				0.9	K/W

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