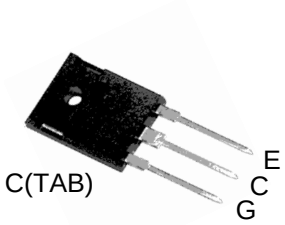
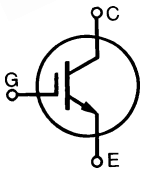
SG45N12T

Discrete IGBTs

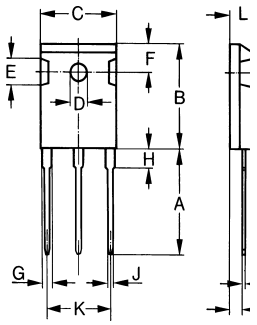


G=Gate, C=Collector,
E=Emitter,TAB=Collector



SG45N12T

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} I_{CM}	T_C=25°C; limited by leads T_C=90°C T_C=25°C, 1 ms	75 45 180	A
SSOA (RBSOA)	V_{GE}=15V; T_{VJ}=125°C; R_G=5 Ω Clamped inductive load	I_{CM}=90 @ 0.8 V_{CES}	A
P_C	T_C=25°C	300	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 Maximum Tab temperature for soldering SMD devices for 10s	300 260	°C °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=1mA; V_{GE}=0V	1200			V
$V_{GE(th)}$	I_C=750uA; V_{CE}=V_{GE}	2.5		5.0	V
I_{CES}	V_{CE}=V_{CES}; T_J=25°C			250	uA
	V_{GE}=0V; T_J=125°C			2	mA
I_{GES}	V_{CE}=0V; V_{GE}=±20V			±100	nA
$V_{CE(sat)}$	I_C=I_{C90}; V_{GE}=15V			2.5	V

Sirectifier®

SG45N12T

Discrete IGBTs

(T_J=25°C, unless otherwise specified)

Symbol	Test Conditions	Characteristic Values			Unit
		min.	typ.	max.	
g_{ts}	I_C=I_{C90}; V_{CE}=10V Pulse test, t≤300us, duty cycle≤2%	33	44		S
$I_{C(ON)}$	V_{GE}=10V; V_{CE}=10V		220		A
C_{ies}			4700		
C_{oes}	V_{CE}=25V; V_{GE}=0V; f=1MHz		255		pF
C_{res}			89		
Q_g			170		
Q_{ge}	I_C=I_{C90}; V_{GE}=15V; V_{CE}=0.5V_{CES}		28		nC
Q_{gc}			57		
$t_{d(on)}$	Inductive load, T_J=25°C		55		ns
t_{ri}	I_C=I_{C90}; V_{GE}=15V;		28		ns
$t_{d(off)}$	V_{CE}=0.8V_{CES}; R_G=R_{off}=5Ω		370	800	ns
t_{fi}	Remarks:Switching times may increase		390	700	ns
E_{off}	for V_{CE}(Clamp) > 0.8V_{CES}, higher T_J or increased R_G		14	25	mJ
$t_{d(on)}$	Inductive load, T_J=125°C		64		ns
t_{ri}	I_C=I_{C90}; V_{GE}=15V;		32		ns
E_{on}	V_{CE}=0.8V_{CES}; R_G=R_{off}=5Ω		3.0		mJ
$t_{d(off)}$	Remarks:Switching times may increase		660		ns
t_{fi}	for V_{CE}(Clamp) > 0.8V_{CES}, higher T_J or		740		ns
E_{off}	increased R_G		25		mJ
R_{thJC}				0.42	K/W
R_{thCK}			0.25		K/W