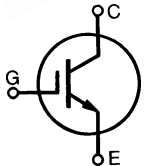
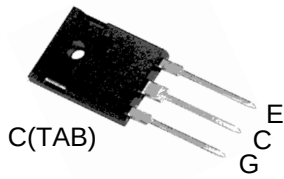


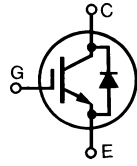
SG35N12T, SG35N12DT

Discrete IGBTs



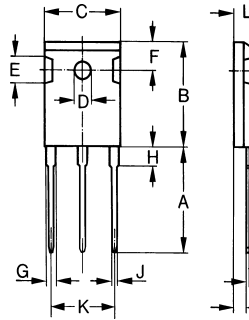
SG35N12T

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



SG35N12DT

Dimensions TO-247AD



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	0.610	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}	$T_J=25^{\circ}\text{C}$ to 150°C $T_J=25^{\circ}\text{C}$ to 150°C ; $R_{GE}=1\text{ M}\Omega$;	1200 1200	V
V_{GES} V_{GEM}	Continuous Transient	± 20 ± 30	V
I_{C25} I_{C90} I_{CM}	$T_C=25^{\circ}\text{C}$ $T_C=90^{\circ}\text{C}$ $T_C=25^{\circ}\text{C}$, 1 ms	70 35 140	A
SSOA (RBSOA)	$V_{GE}=15\text{V}$; $T_{VJ}=125^{\circ}\text{C}$; $R_G=47\Omega$ Clamped inductive load	$I_{CM}=90$ @ 0.8 V_{CES}	A
P_c	$T_C=25^{\circ}\text{C}$	300	W
T_J T_{JM} T_{stg}		-55...+150 150 -55...+150	$^{\circ}\text{C}$
	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	$^{\circ}\text{C}$ $^{\circ}\text{C}$
M_d	Mounting torque (M3)	1.13/10	Nm/lb.in.
Weight		6	g

($T_J=25^{\circ}\text{C}$, unless otherwise specified)

Symbol	Test Conditions	Characteristic Values			Unit
		min.	typ.	max.	
BV_{CES}	$I_C=1\text{mA}$; $V_{GE}=0\text{V}$	1200			V
$V_{GE(th)}$	$I_C=750\mu\text{A}$; $V_{CE}=V_{GE}$	2.5		5.0	V
I_{CES}	$V_{CE}=V_{CES}$; $T_J=25^{\circ}\text{C}$ $V_{GE}=0\text{V}$; $T_J=125^{\circ}\text{C}$			250 5	μA mA
I_{GES}	$V_{CE}=0\text{V}$; $V_{GE}=\pm 20\text{V}$			± 100	nA
$V_{CE(sat)}$	$I_C=I_{C90}$; $V_{GE}=15\text{V}$; $T_J=125^{\circ}\text{C}$		2.7	3.3	V

Sirectifier®

SG35N12T, SG35N12DT

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 ≤ 300μs, duty cycle ≤ 2%	30	40		S
C _{ies} C _{oes} C _{res}	V _{CE} =25V; V _{GE} =0V; f=1MHz		4620 260 90		pF
Q _g Q _{ge} Q _{gc}	I _C =I _{C90} ; V _{GE} =15V; V _{CE} =0.5V _{CES}		170 28 57		nC
t _{d(on)} t _{ri} t _{d(off)} t _{fi} E _{off}	Inductive load, T _J =25°C I _C =I _{C90} ; V _{GE} =15V; V _{CE} =0.8V _{CES} ; R _G =R _{off} =5Ω Remarks: Switching times may increase for V _{CE} (Clamp) > 0.8V _{CES} higher T _J or increased R _G		50 27 180 160 3.8	280 320 7.3	ns ns ns ns mJ
t _{d(on)} t _{ri} E _{on} t _{d(off)} t _{fi} E _{off}	Inductive load, T _J =125°C I _C =I _{C90} ; V _{GE} =15V; V _{CE} =0.8V _{CES} ; R _G =R _{off} =5Ω Remarks: Switching times may increase for V _{CE} (Clamp) > 0.8V _{CES} higher T _J or increased R _G		55 31 2.6 300 360 8.0		ns ns mJ ns ns mJ
R _{thJC}				0.42	K/W
R _{thCK}			0.25		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 T _{VJ} =25°C			2.2 2.55	V
I _{RM}	V _R =540V; I _F =30A; -di _F /dt=240A/μs L ≤ 0.05μH; T _{VJ} =100°C		16	18	A
t _{rr}	I _F =1A; -di _F /dt=100A/μs; V _R =30V; T _{VJ} =25°C		40	60	ns
R _{thJC}				0.9	K/W