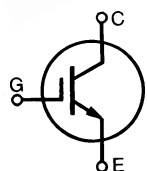
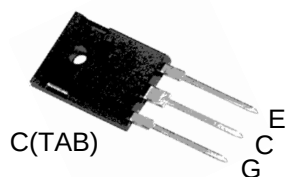


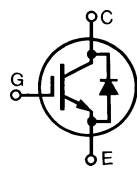
SG50N06T, SG50N06DT

Discrete IGBTs



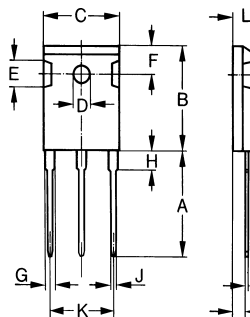
SG50N06T

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



SG50N06DT

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 ; $R_{GE}=1\text{ M}\Omega$;	600 600	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	75 50 200	A
SSOA (RBSOA)	$V_{GE}=15\text{V}$; $T_{VJ}=125^{\circ}\text{C}$; $R_G=10\Omega$ Clamped inductive load	$I_{CM}=100$ @ 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	300	$^{\circ}\text{C}$
M_d	Mounting torque	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}	$I_C=250\mu\text{A}$; $V_{GE}=0\text{V}$	600			V
$V_{GE(th)}$	$I_C=250\mu\text{A}$; $V_{CE}=V_{GE}$	2.5		5.0	V
I_{CES}	$V_{CE}=0.8V_{CES}$; $T_J=25^{\circ}\text{C}$ $V_{GE}=0\text{V}$; $T_J=125^{\circ}\text{C}$			200 1	μA mA
I_{GES}	$V_{CE}=0\text{V}$; $V_{GE}=\pm 20\text{V}$			± 100	nA
$V_{CE(sat)}$	$I_C=I_{C90}$; $V_{GE}=15$			2.5	V

SG50N06T, SG50N06DT

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%	25	35		S
C _{ies} C _{oes} C _{res}	V _{CE} =25V; V _{GE} =0V; f=1MHz		4000 340 100		pF
Q _g Q _{ge} Q _{gc}	I _C =I _{C90} ; V _{GE} =15V; V _{CE} =0.5V _{CES}		110 30 40	180 50 100	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} =2.7Ω Remarks: Switching times may increase for V _{CE} (Clamp) > 0.8V _{CES} higher T _J or increased R _G		50 50 200 150 3.0	 300 270 6.0	ns ns ns ns mJ
t _{d(on)} t _{ri} E _{on} t _{d(off)} t _{fi} E _{off} R _{thJC}	Inductive load, T _J =25°C I _C =I _{C90} ; V _{GE} =15V V _{CE} =0.8V _{CES} ; R _G =R _{off} =2.7Ω Remarks: Switching times may increase for V _{CE} (Clamp) > 0.8V _{CES} higher T _J or increased R _G		50 50 2 280 250 4.2	 0.62	ns ns mJ ns ns mJ 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 =I _{C90} ; V _{GE} =0V; Pulse test; t ≤ 300ms, duty cycle ≤ 22%			2.5	V
I _{RM}	I _F =I _{C90} ; V _{GE} =0V; -di _F /dt=100A/ms V _R =100V;		2	2.5 175	A ns
t _{rr}	I _F =1A; -di/dt=200A/ms; V _R =30V		35	50	ns
R _{thJC}				0.65	K/W