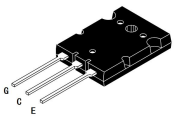
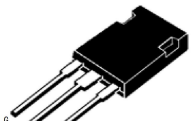
Features

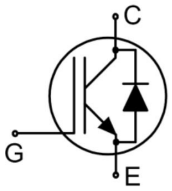
- Very Low Saturation Voltage:
  VCE(sat) = 1.65V @ IC = 100 A
- Maximum Junction Temperature: TJ = 175°C
- Positive Temperature Co−Efficient
- Tight Parameter Distribution
- High Input Impedance



TO-264



TO-247Plus



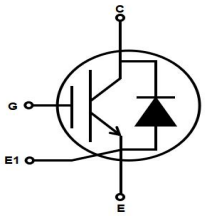


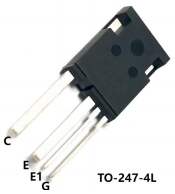
SOT-227

Applications

- Traction Inverter for HEV/EV
- Auxiliary DC/AC Converter
- Motor Drives
- Other Power−Train Applications
  Requiring High Power Switch

MSG100T65HLB3/C1/F4





TO-247-4L

MSG100T65HLC6

Absolute Ratings(Tc=25℃)

Parameter	Symbol	Value	Unit
Collector-Emitter Voltage	V_{ce}	650	V
Collector Current-continuous	I_C T=25℃	200	A
	T=100℃	100	A
Diode forward current	I_F T=25℃	150	A
	Tc=100℃	75	A
Collector Current-pulse (note 1)	I_{CM}	300	A
Gate-Emitter Voltage	V_{GES}	±20	V
Power Dissipation (TO-264，TO-247Plus，TO-247-4L)	PD	750	W
Power Dissipation(SOT-227)	PD	1000	
Operating and Storage Temperature Range	T_J,T_{STG}	-55~+150	℃
Short Circuit Withstand Time	t_{sc}	5	us
Maximum Lead Temperature for Soldering Purposes	T_L	300	℃
Isolation Voltage for Case-Terminal	V_{ISO}	3.0	KV

Electrical Characteristics(Tvj = 25°C unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Off-Characteristics						
Collector-Emitter Voltage	BV_{CES}	Ic=1.6mA,V_{GE}=0V	650	-	-	V
Zero Gate Voltage Collector Current	I_{CES}	V_{CE}=650V,V_{GE}=0V,	-	-	2	μA
Gate-body leakage current, forward	I_{GESF}	V_{CE}=0V,V_{GE}=20V	-	-	100	nA
Gate-body leakage current, reverse	I_{GESR}	V_{CE}=0V,V_{GE}=-20V	-	-	-100	nA
On-Characteristics						
Gate Threshold Voltage	$V_{GE(th)}$	V_{CE}=V_{GE},Ic=0.6mA	3.5	5.0	6.5	V
Collector-Emitter saturation Voltage	V_{CESAT}	V_{GE}=15V Ic=100A	-	-	1.65	V
Dynamic Characteristics						
Input capacitance	Cies	V_{CE}=30V, V_{GE}=0V, f=1.0MHZ	-	5012	-	pF
Output capacitance	Coes		-	430	-	pF
Reverse transfer capacitance	Cres		-	100	-	pF

Electrical Characteristics(Tvj = 25°C unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Switching Characteristics						
Turn-on delay time	td(on)	V_{CC}=400V,Ic=100A, R_G=4.7Ω，V_{GE}=15V, Inductive Load Tc=25℃	-	84	-	ns
Turn-On rise time	tr		-	147	-	ns
Turn-Off delay time	td(off)		-	216	-	ns
Turn-Off Fall time	t_f		-	133	-	ns
Turn-on Loss	E_{on}		-	5.4	-	mJ
Turn-off Loss	E_{off}		-	3.8	-	mJ
Total Loss	E_{ts}		-	9.2	-	mJ
Turn-on delay time	td(on)	V_{CC}=400V,Ic=100A, R_G=4.7Ω，V_{GE}=15V, Inductive Load Tc=175℃	-	80	-	ns
Turn-On rise time	tr		-	160	-	ns
Turn-Off delay time	td(off)		-	244	-	ns
Turn-Off Fall time	t_f		-	166	-	ns

Turn-on switching Loss	E_{on}		-	9.7	-	mJ
Turn-off switching Loss	E_{off}		-	5.2	-	mJ
Total switching Loss	E_{ts}		-	14.9	-	mJ
Gate Charge	Q_g	V_{CC}=400V,Ic=100A V_{GE}=15V	-	157	-	nC
Gate to Emitter Charge	Q_{ge}		-	43	-	nC
Gate to Collector Charge	Q_{gc}		-	64	-	nC
Anti-Parallel Diode Characteristics and Maximum Ratings						
Drain-Source Diode Forward Voltage	V_F	I_F=75A(T_J=25℃)	-	1.6	-	V
Diode Reverse recovery time	t_{rr}	I_F=75A dI_F=/dt=200A/us T_J=25℃	-	62	-	ns
Diode Reverse recovery charge	Q_{rr}		-	164	-	nC

Thermal Characteristic

Parameter	Symbol	Max				Unit
		TO-264	TO-247Plus	TO-247-4L	SOT-227	
Thermal Resistance,Junction to Case (IGBT)	Rth(j-c)	0.2			0.145	℃/W
Thermal Resistance,Junction to Case (Diode)	Rth(j-c)	0.3			0.25	℃/W
Thermal Resistance,Junction to Ambient	Rth(j-A)	25			10	℃/W

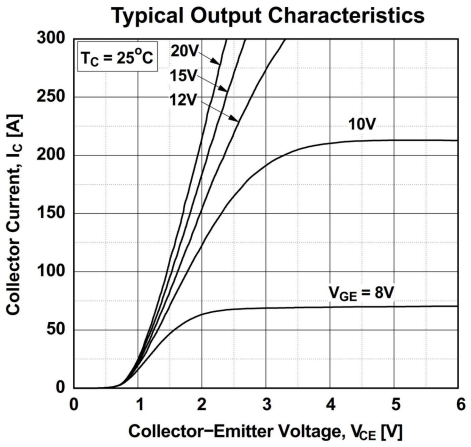
Note:

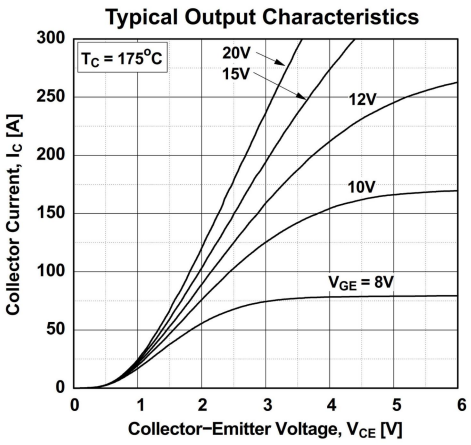
1. Repetitive Rating: Pulse width limited by maximum junction temperature

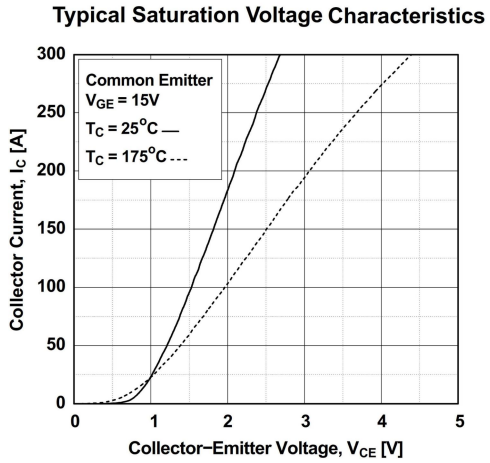
Order Information

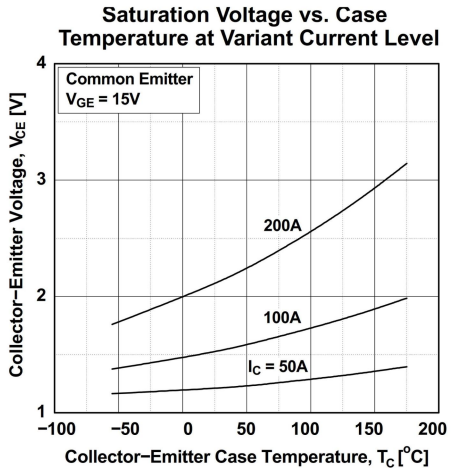
type specification	packaging
MSG100T65HLB3	TO-264
MSG100T65HLC1	TO-247Plus
MSG100T65HLF4	SOT-227
MSG100T65HLC6	TO-247-4L

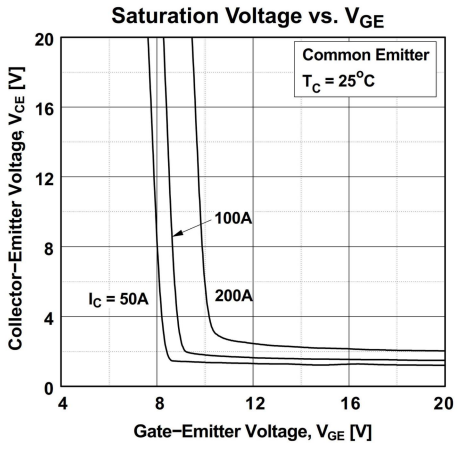
Electrical Characteristics(curves)

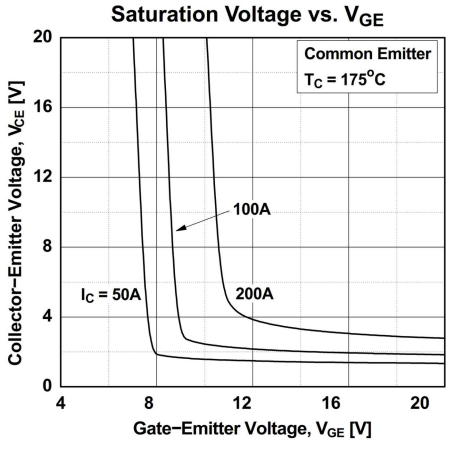




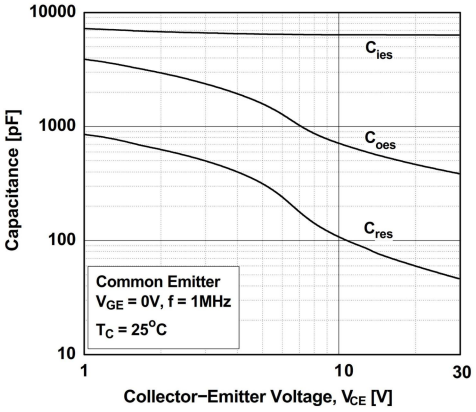




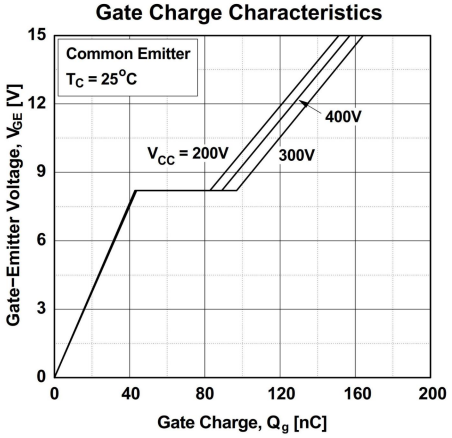




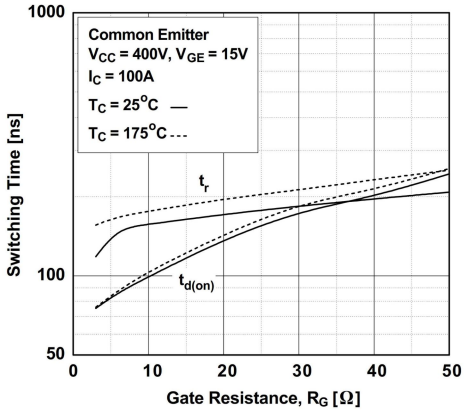
Capacitance Characteristics



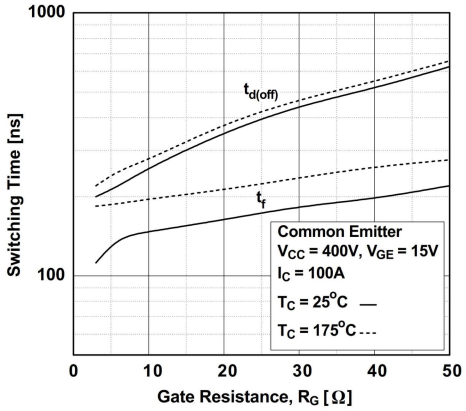
Gate Charge Characteristics



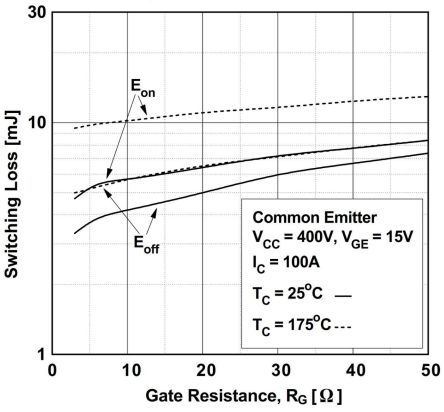
Turn-on Characteristics vs. Gate Resistance



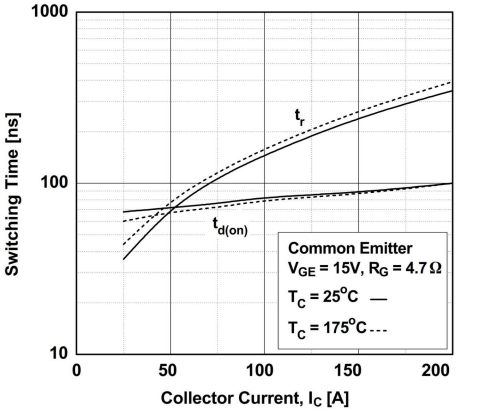
Turn-off Characteristics vs. Gate Resistance



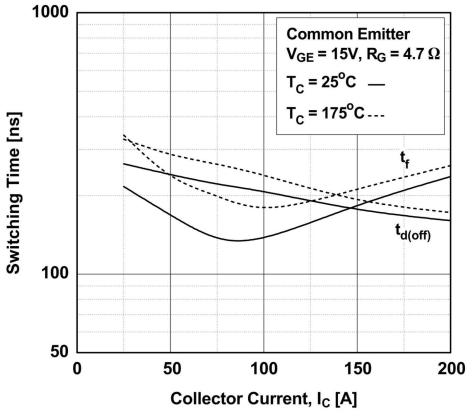
Switching Loss vs. Gate Resistance



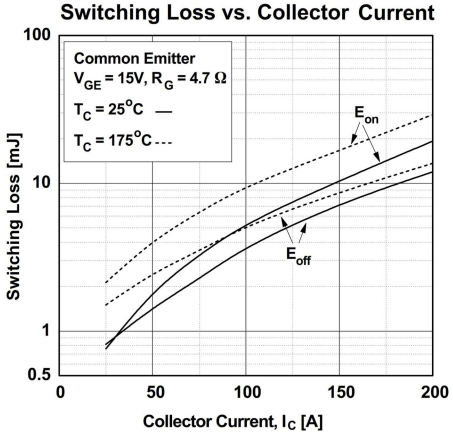
Turn-on Characteristics vs. Collector Current



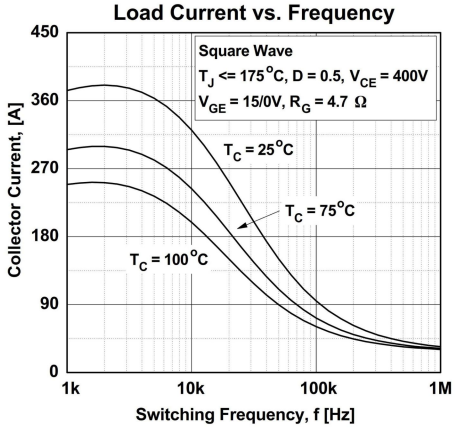
Turn-off Characteristics vs. Collector Current



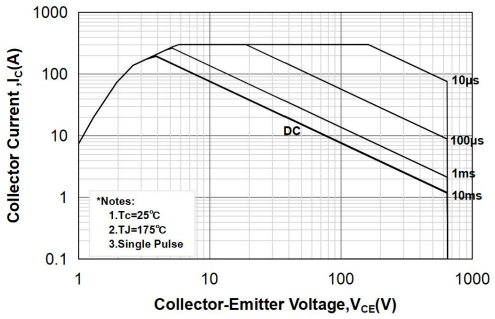
Switching Loss vs. Collector Current



Load Current vs. Frequency

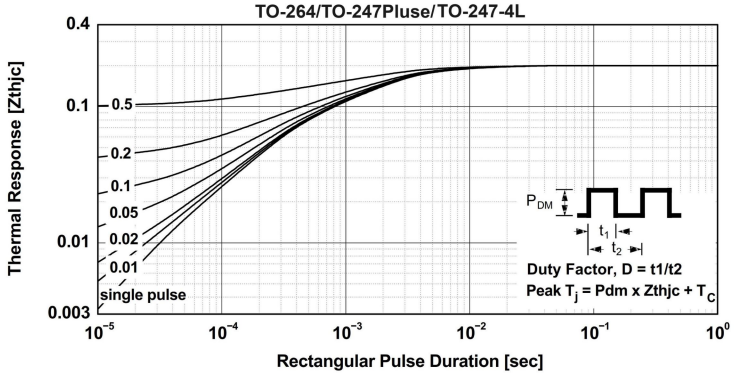


Foward Bias Safe Operating Area For TO-264/TO-247Plus/TO-247-4L

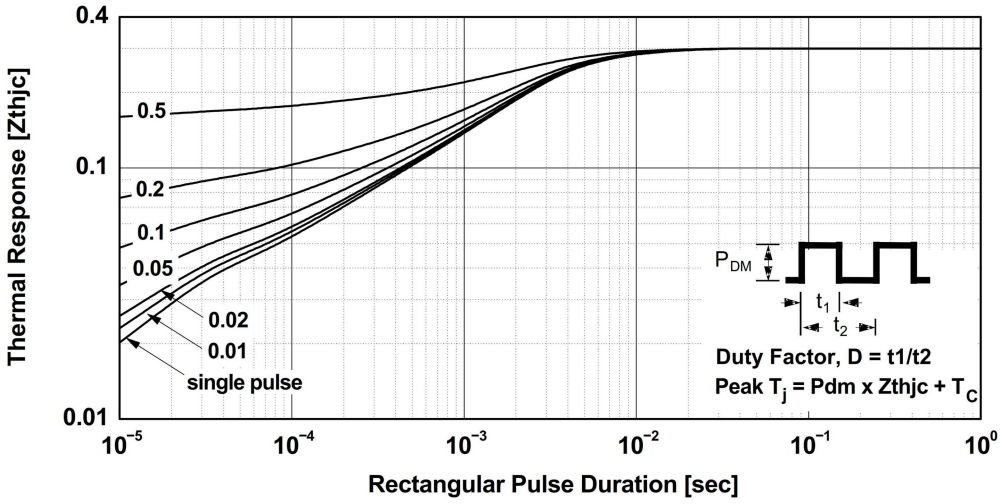


Transient Thermal Impedance of IGBT

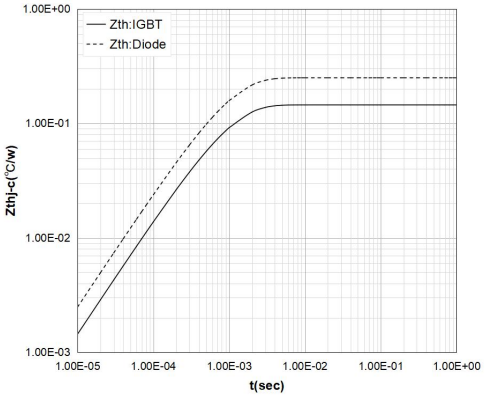
TO-264/TO-247Pluse/TO-247-4L



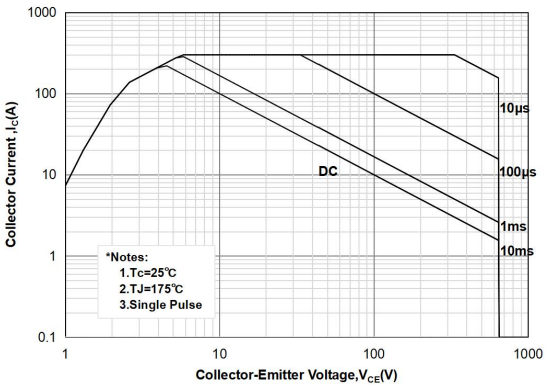
Transient Thermal Impedance of Diode



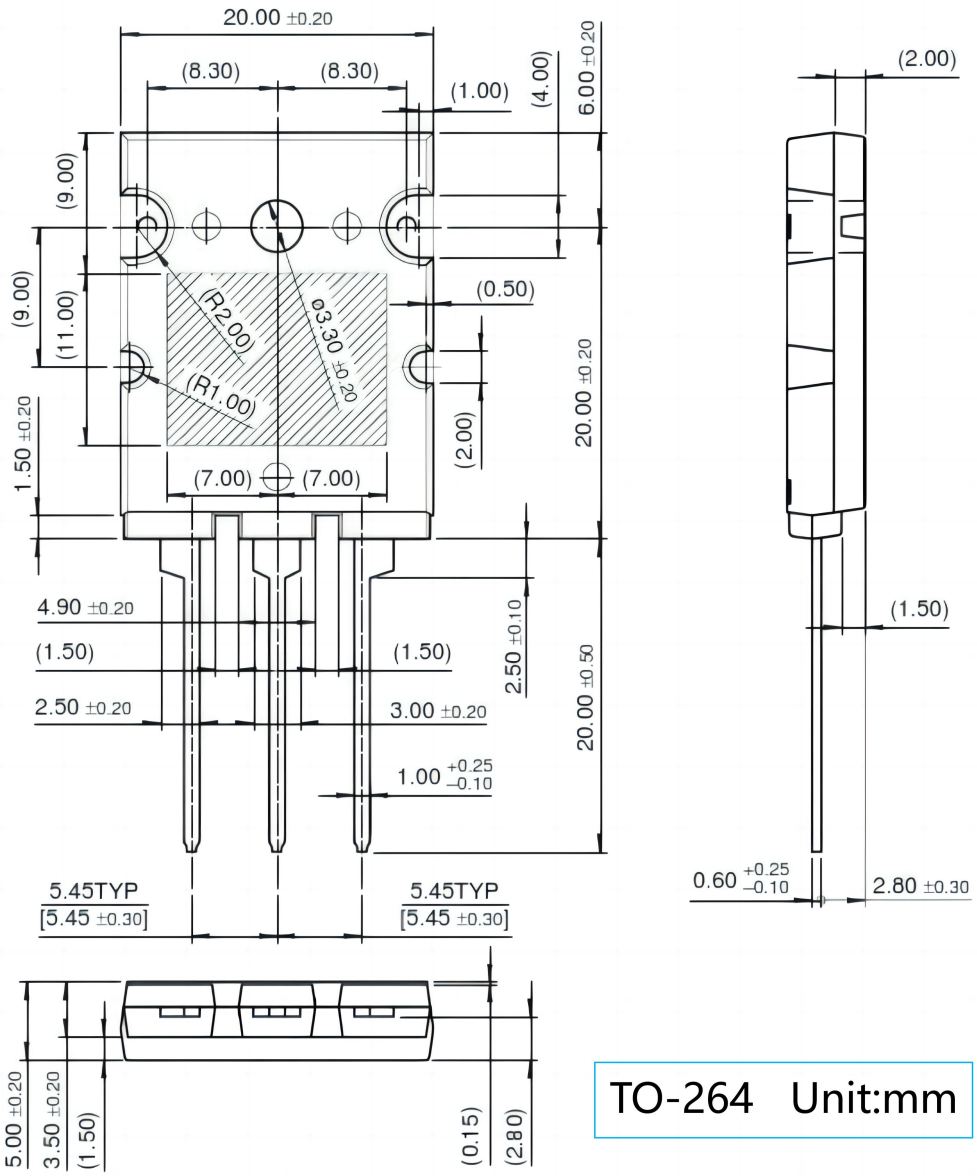
Transient Thermal Impedance for SOT-227



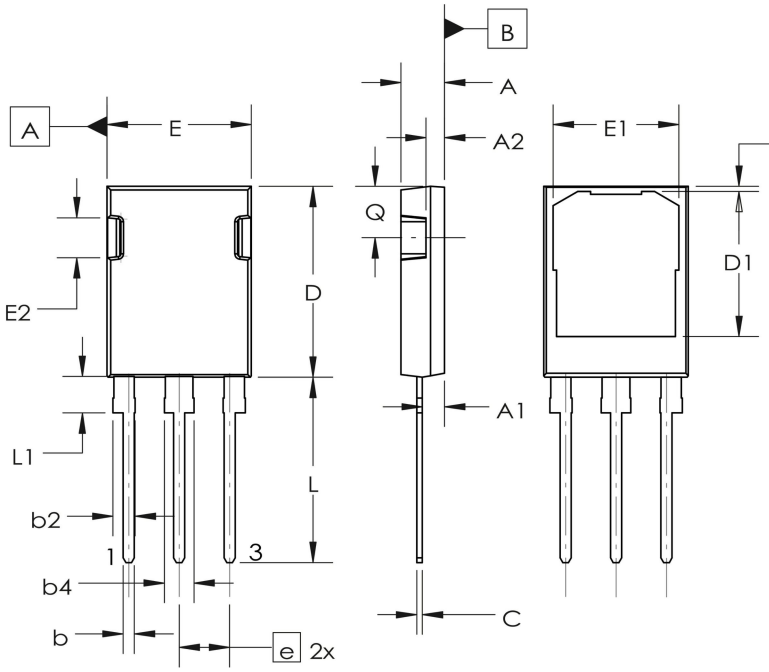
Foward Bias Safe Operating Area For SOT-227



Package Mechanical DATA

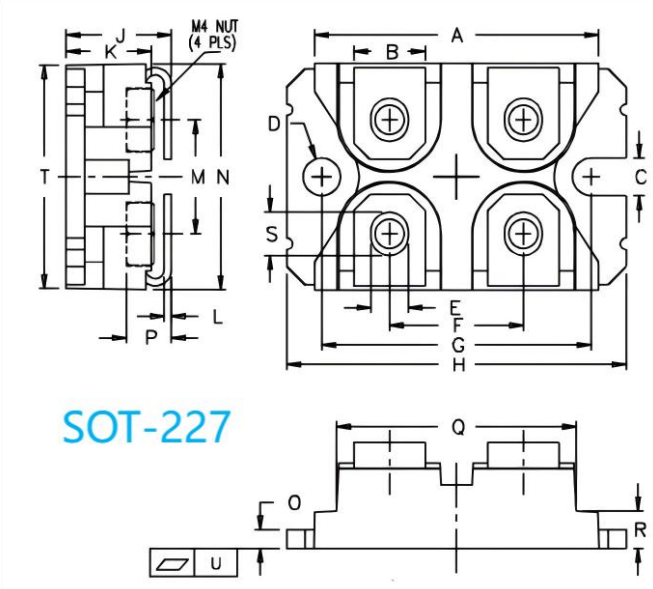


TO-264 Unit:mm



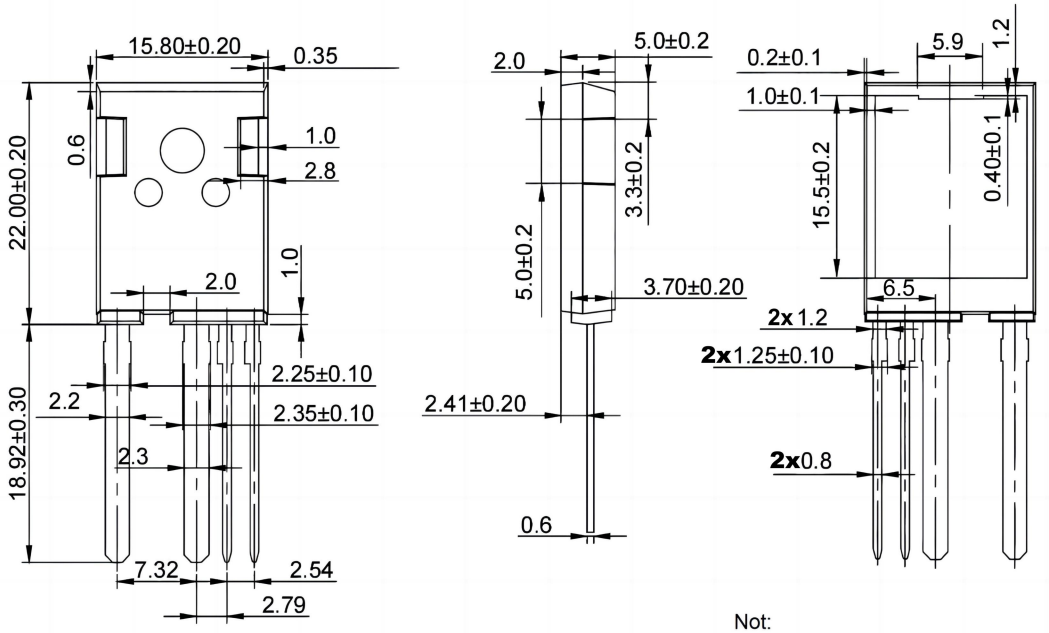
TO-247plus **Unit:mm**

DIM	MILLIMETERS		
	MIN	NOM	MAX
A	4.60	4.70	4.80
A1	2.10	2.40	2.70
A2	1.70	2.00	2.30
b	1.16	1.20	1.26
b2	2.20	2.40	2.60
b4	3.00	3.20	3.40
c	0.59	0.60	0.66
D	20.40	20.60	20.80
D1	15.47	15.67	15.87
D2	0.25	0.55	0.85
e	5.45 BSC		
E	15.40	15.60	15.80
E1	13.40	13.60	13.80
E2	4.12	4.30	4.52
L	19.70	20.00	20.30
L1	3.65	3.85	4.05
Q	5.35	5.55	5.75



SOT-227

Dim.	Milimeter		Inches	
	Min.	Max.	Min.	Max.
A	31.66	32.06	1.246	1.262
B	7.80	8.20	0.307	0.323
C	4.00	4.40	0.157	0.173
D	4.00	4.40	0.157	0.173
E	4.00	4.40	0.157	0.173
F	14.45	14.85	0.569	0.585
G	30.00	30.40	1.181	1.197
H	37.99	38.39	1.496	1.511
J	11.67	12.07	0.459	0.475
K	9.33	9.73	0.367	0.383
L	0.65	1.05	0.025	0.041
M	12.15	12.55	0.478	0.494
N	24.90	25.30	0.980	0.996
O	1.85	2.25	0.073	0.089
P	5.00	5.40	0.197	0.213
Q	26.60	27.00	1.047	1.063
R	4.05	4.45	0.159	0.175
S	4.49	4.89	0.177	0.193
T	24.78	25.18	0.976	0.991
U	-0.05	0.10	-0.002	0.004



Unit:mm

TO-247-4L

Not:
1.Unmarked tolerance±0.15
2.pitted surface Ra1.6-1.8

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Üretici parça numarasını yazın; stok ve fiyatı hemen görün.

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Üreticileri görün

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