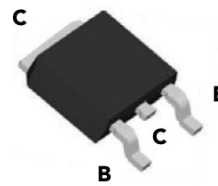
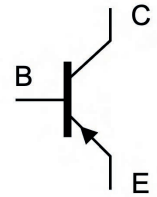


Features

- Designed for general purpose amplifier and low speed switching applications
- DPAK for surface-mount applications
- Low collector emitter saturation voltage
- High current



TO-252 (DPAK)



Schematic Diagram

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-80	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-6	V
Collector Current-Continuous	I_C	-8	A
Collector Power Dissipation ³	P_C	1.8	W
Thermal Resistance, from Junction to Case ¹	$R_{\theta JC}$	3	$^{\circ}\text{C/W}$
Thermal Resistance, from Junction to Ambient ²	$R_{\theta JA}$	68	$^{\circ}\text{C/W}$
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-1\text{mA}, I_E=0$	-80	-	-	V
Collector-Emitter Breakdown Voltage ⁴	$V_{(BR)CEO}$	$I_C=-30\text{mA}, I_B=0$	-60	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-1\text{mA}, I_C=0$	-6	-	-	V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-80\text{V}, I_E=0$	-	-	-1	μA
Base Cut-Off Current	I_{CEO}	$V_{CE}=-60\text{V}, I_B=0$	-	-	-1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=-6\text{V}, I_C=0$	-	-	-1	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-1\text{V}, I_C=-2\text{A}$	60	-	-	-
	$h_{FE(2)}$	$V_{CE}=-1\text{V}, I_C=-4\text{A}$	40	-	-	
	$h_{FE(3)}$	$V_{CE}=-5\text{V}, I_C=-1\text{A}$	80	-	600	
Collector-Emitter Saturation Voltage ⁴	$V_{CE(sat)}$	$I_C=-8\text{A}, I_B=-0.4\text{A}$	-	-	-0.8	V
Base-Emitter Saturation Voltage ⁴	$V_{BE(sat)}$	$I_C=-8\text{A}, I_B=-0.8\text{A}$	-	-	-1.5	V
Transition Frequency	f_T	$V_{CE}=-10\text{V}, I_C=-100\text{mA}, F=1\text{MHz}$	10	-	-	MHz

Notes:

1. Thermal resistance from junction to lead mounted on FR4 PCB double sided copper with mini pad, $T_C=25^{\circ}\text{C}$.
2. Thermal resistance from junction to ambient mounted on FR4 PCB double sided copper with mini pad, $T_A=25^{\circ}\text{C}$.
3. $T_C=25^{\circ}\text{C}$ Limited only by maximum temperature allowed.
4. Pulse Test: Pulse width $\leq 380\mu\text{s}$, duty cycle $\leq 2\%$.

Typical Electrical Characteristic Curves

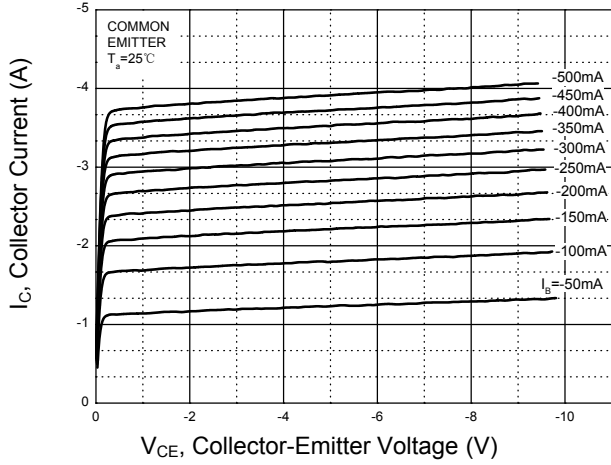


Figure 1. Static Characteristic

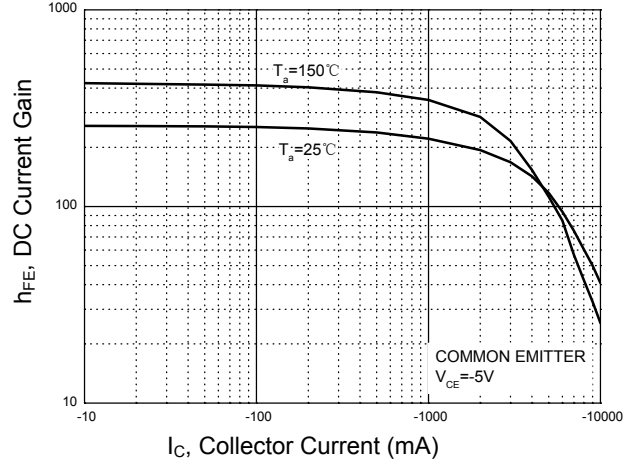


Figure 2. $h_{FE} - I_C$

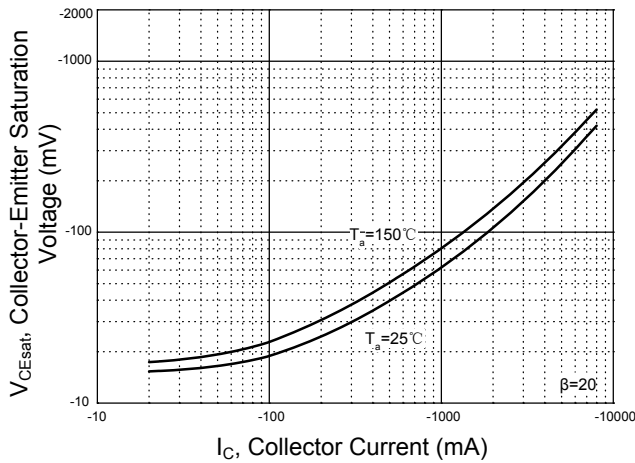


Figure 3. $V_{CEsat} - I_C$

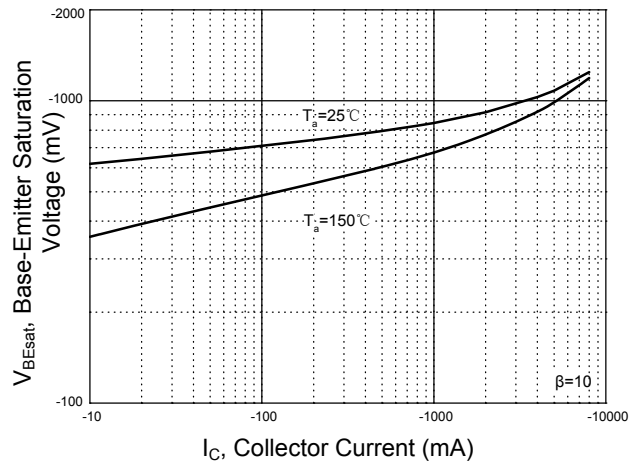


Figure 4. $V_{BEsat} - I_C$

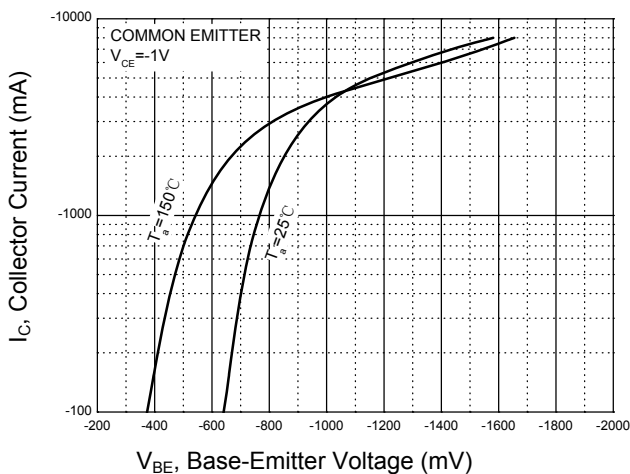


Figure 5. $I_C - V_{BE}$

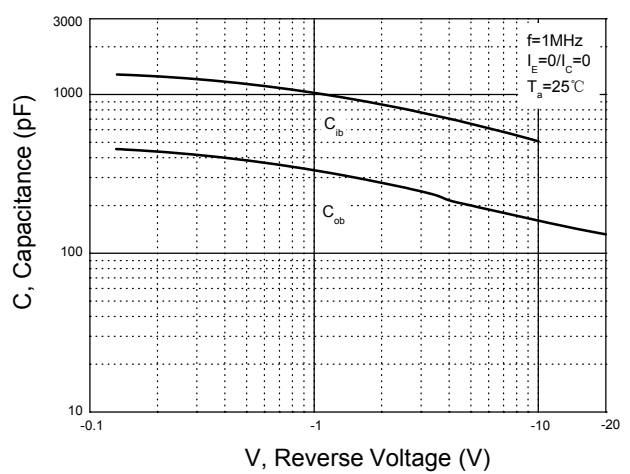


Figure 6. $C_{ob}/C_{ib} - V_{CB}/V_{EB}$

Typical Electrical Characteristic Curves

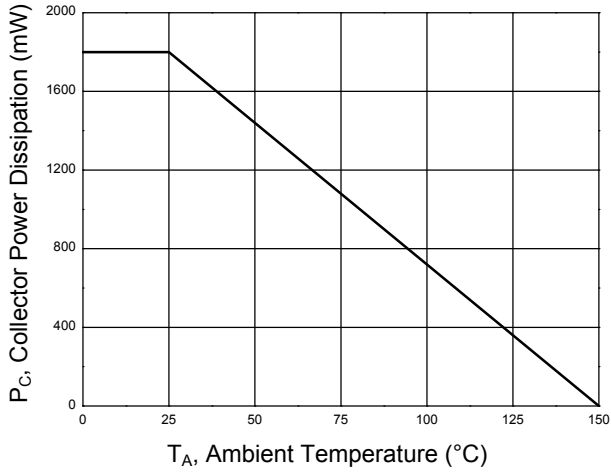


Figure 7. $P_C - T_a$

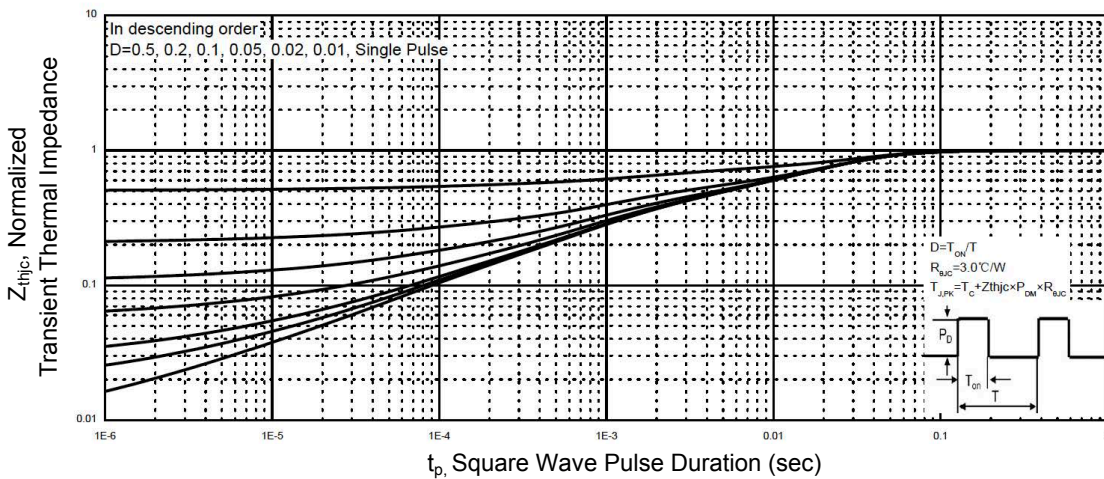


Figure 8. Normalized Transient Thermal Impedance

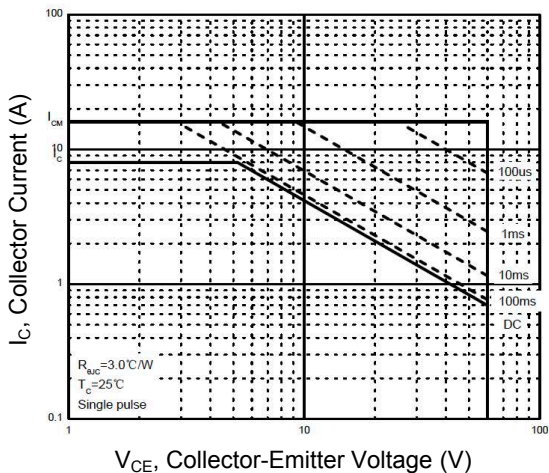
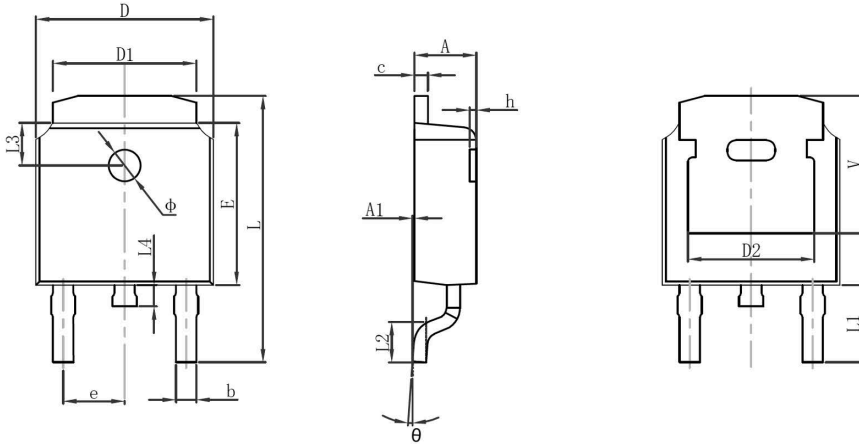


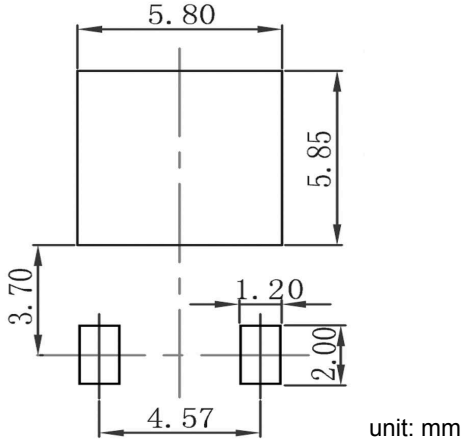
Figure 9. Maximum Forward Biased Safe Operating Area

Package Outline Dimensions TO-252 (DPAK)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF		0.190 REF	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.382	0.406
L1	2.900 REF		0.114 REF	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF		0.063 REF	
L4	0.600	1.000	0.024	0.039
φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF		0.207 REF	

Recommended Pad Layout



Order Information

Device	Package	Marking	Quantity	HSF Status
GSMJD45H11	TO-252 (DPAK)	MJD45H11	2,500pcs / Reel	RoHS Compliant