

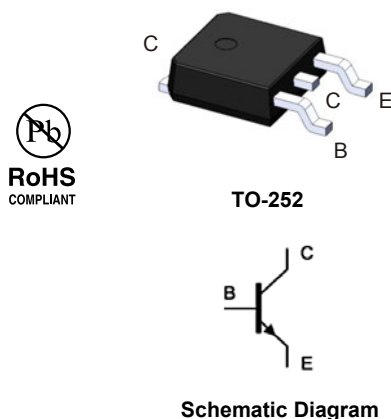
GSC406R NPN Transistor

Features

- High switching speed
- Low forward voltage drop
- High efficiency and low power loss
- High current surge capability
- Halogen and antimony free (HAF)
- RoHS compliant

Applications

- Electronic ballast
- Switching mode power supply
- Motor controls
- Solenoid/Relay drivers and deflection circuits applications



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

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	400	V
Collector Emitter Voltage	V_{CEO}	200	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_C	7	A
Total Power Dissipation ($T_C=25^{\circ}\text{C}$)	P_{tot}	60	W
Max. Thermal Resistance from Junction to Case	$R_{\theta JC}$	2.08	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Collector Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$	400	-	-	V
Collector Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=100\text{mA}$	200	-	-	V
Emitter Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}$	6	-	-	V
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=5\text{A}, I_B=500\text{mA}$	-	-	1	V
Collector Base Cutoff Current	I_{CBO}	$V_{CB}=300\text{V}$	-	-	10	μA
Emitter Base Cutoff Current	I_{EBO}	$V_{EB}=6\text{V}$	-	-	10	μA
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}, I_C=1\text{A}$	50	-	100	-
Gain Bandwidth Product	f_T	$V_{CE}=5\text{V}, I_C=100\text{mA}, f=100\text{MHz}$	-	130	-	MHz

Electrical Characteristic Curves

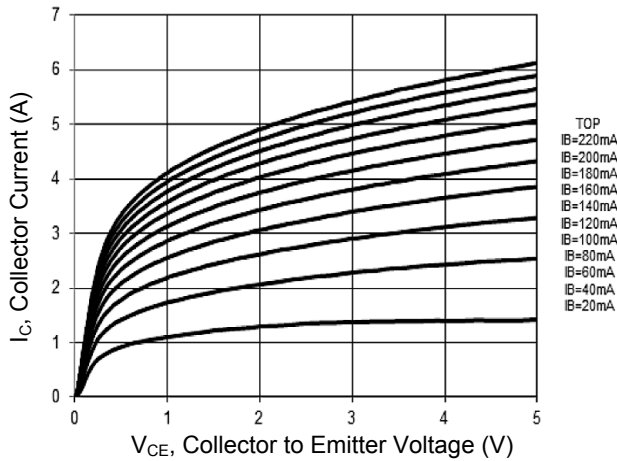


Figure 1. Output Characteristics Curve

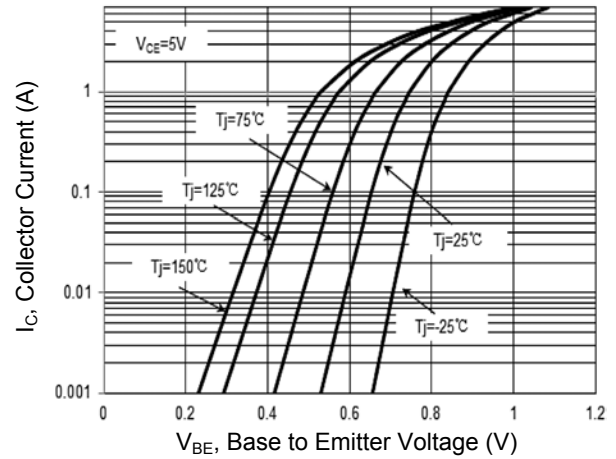


Figure 2. Collector Current vs. V_{BE}

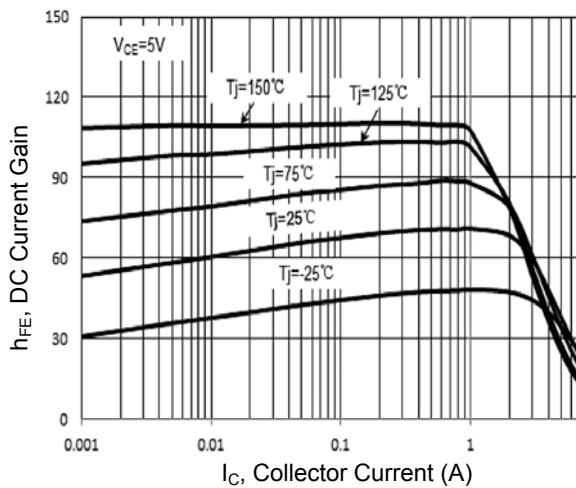


Figure 3. h_{FE} vs. Collector Current

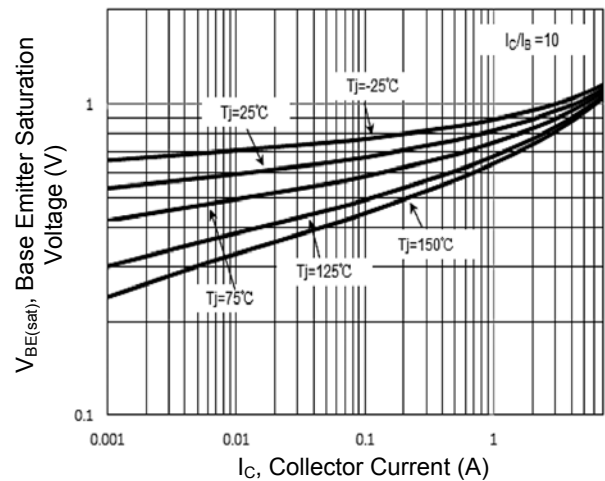


Figure 4. $V_{BE(sat)}$ vs. Collector Current

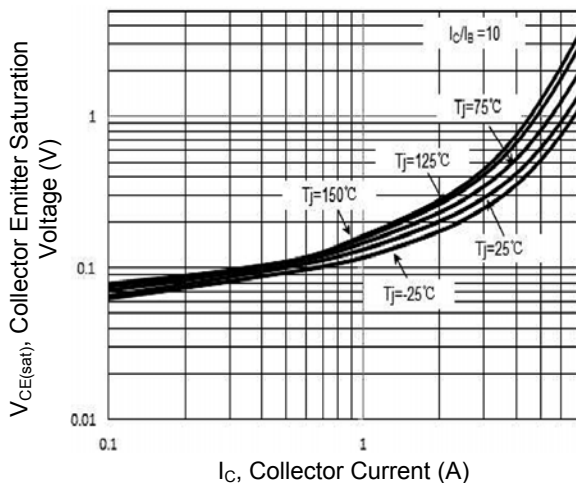


Figure 5. $V_{CE(sat)}$ vs. Collector Current

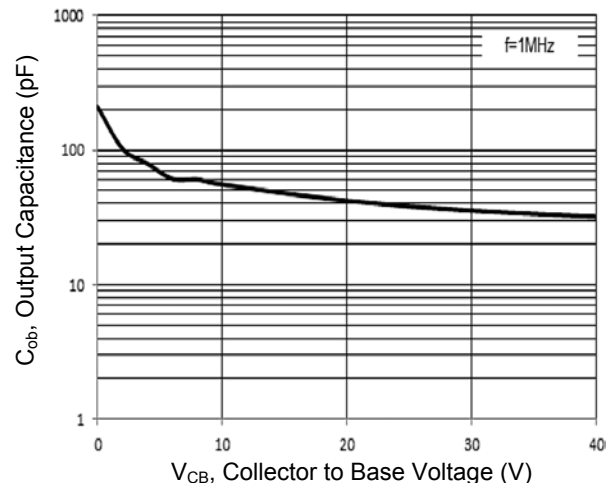


Figure 6. Output Capacitance

Electrical Characteristic Curves

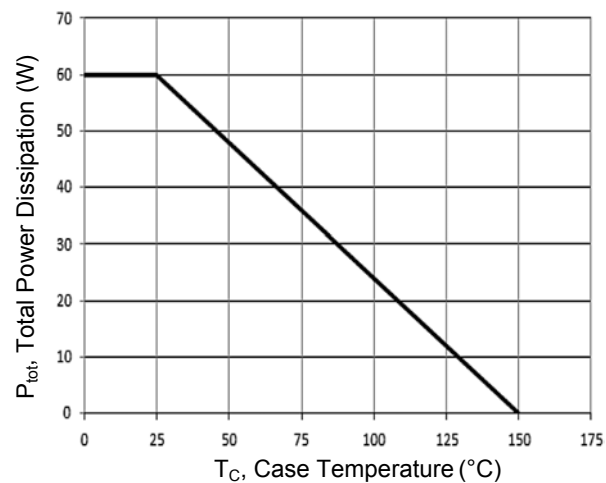
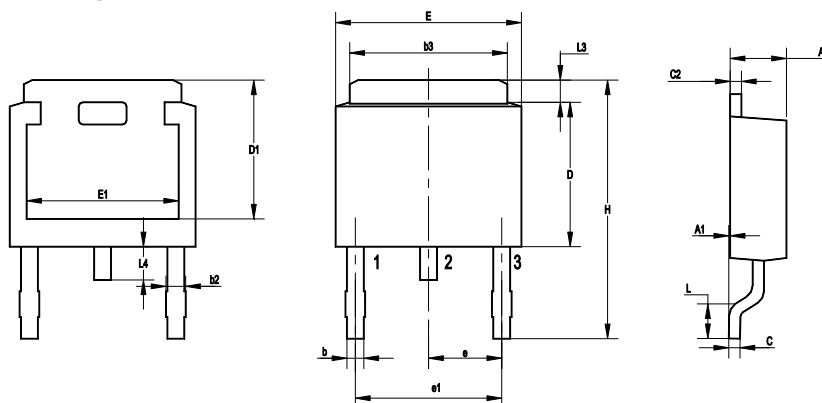


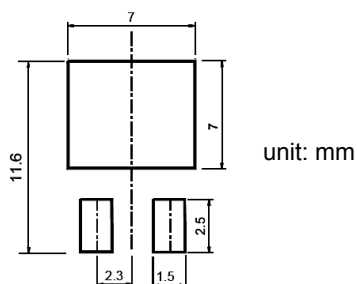
Figure 7. Power Derating Curve

Package Outline Dimensions (TO-252)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.10	2.50	0.083	0.098
A1	0.00	0.15	0.000	0.006
b	0.50	1.00	0.020	0.039
b2	0.65	1.15	0.026	0.045
b3	4.90	5.50	0.193	0.217
C	0.40	0.65	0.016	0.026
C2	0.40	0.65	0.016	0.026
D	5.60	6.20	0.220	0.244
D1	5.00	5.40	0.197	0.213
E	6.10	6.70	0.240	0.264
E1	4.60	5.00	0.181	0.197
e	2.30 TYP		0.091 TYP	
e1	4.60 TYP		0.181 TYP	
H	9.00	10.70	0.354	0.421
L	1.40	1.78	0.055	0.070
L3	0.85	1.20	0.033	0.047
L4	0.51	1.10	0.020	0.043

Recommended Pad Layout



Ordering Information

Device	Package	Marking	Carrier	Quantity
GSC406R	TO-252	2SC406R	Tape & Reel	2,500 Pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com