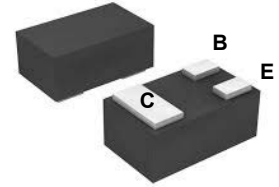


GSBC84xxM NPN Transistors

Feature.

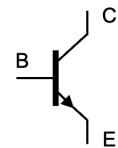
- Epoxy meets UL 94 V-0 flammability rating
- Moisture sensitivity Level 1
- Lead free finish/RoHS compliant
- Low reverse leakage



DFN1006-3L

Mechanical Data

- DFN1006-3L small outline plastic package
- Color band denotes cathode end
- Mounting Position: Any



Schematic Diagram

Maximum Ratings (T_A=25°C unless otherwise specified)

Parameters		Symbol	Value	Unit
Collector-Base Voltage	GSBC846xM	V _{CBO}	80	V
	GSBC847xM		50	
	GSBC848xM		30	
Collector-Emitter Voltage	GSBC846xM	V _{CEO}	65	V
	GSBC847xM		45	
	GSBC848xM		30	
Emitter-Base Voltage		V _{EB0}	6	V
Collector Power Dissipation		P _C	150	mW
Collector Current		I _C	100	mA
Operating Junction Temperature		T _J	-55 to +150	°C
Storage Temperature Range		T _S	-55 to +150	°C
Thermal Resistance from Junction to Ambient		R _{θJA}	833	°C/W

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

Parameter		Symbol	Test Condition	Min	Typ	Max	Unit
Collector-Base Voltage	GSBC846xM	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	80	-	-	V
	GSBC847xM			50	-	-	
	GSBC848xM			30	-	-	
Collector-Emitter Voltage	GSBC846xM	$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$	65	-	-	
	GSBC847xM			45	-	-	
	GSBC848xM			30	-	-	
Emitter-Base Voltage		$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6	-	-	
Collector Cut-off Current		I_{CBO}	$V_{CB}=30\text{V}, I_E=0$	-	-	15	nA
Emitter Cutoff Current		I_{EBO}	$V_{EB}=5\text{V}, I_C=0$	-	-	100	
Emitter Cutoff Current		I_{CEO}	$V_{CE}=30\text{V}, I_B=0$	-	-	1	mA
DC Current Gain	GSBC846AM, GSBC847AM, GSBC848AM	$H_{FE(1)}$	$V_{CE}=5\text{V}, I_C=10\text{mA}$	-	110	-	-
	GSBC846BM, GSBC848BM			-	250	-	-
	GSBC847CM, GSBC848CM			-	480	-	-
DC Current Gain	GSBC846AM, GSBC847AM, GSBC848AM	$H_{FE(2)}$	$V_{CE}=5\text{V}, I_C=2\text{mA}$	110	-	220	-
	GSBC846BM, GSBC848BM			200	-	450	-
	GSBC847CM, GSBC848CM			420	-	800	-
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$	-	0.09	0.3	V
			$I_C=100\text{mA}, I_B=5\text{mA}$	-	0.2	0.6	
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$	-	0.7	0.9	
			$I_C=100\text{mA}, I_B=5\text{mA}$	-	0.9	1.1	
Base-Emitter On Voltage		$V_{BE(on)}$	$V_{CE}=5\text{V}, I_C=2\text{mA}$	0.58	0.66	0.7	
			$V_{CE}=5\text{V}, I_C=10\text{mA}$	-	-	0.77	
Transition Frequency		F_T	$V_{CE}=5\text{V}, I_C=10\text{mA}, F=100\text{MHz}$	100	-	-	MHz

Typical Characteristic Curves

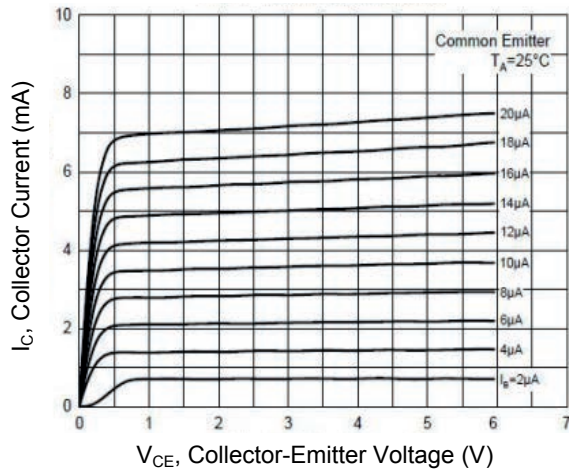


Figure 1. Static Characteristics

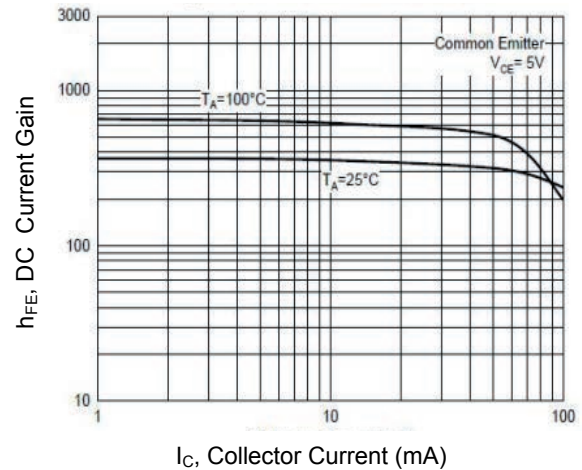


Figure 2. DC Current Gain Characteristics

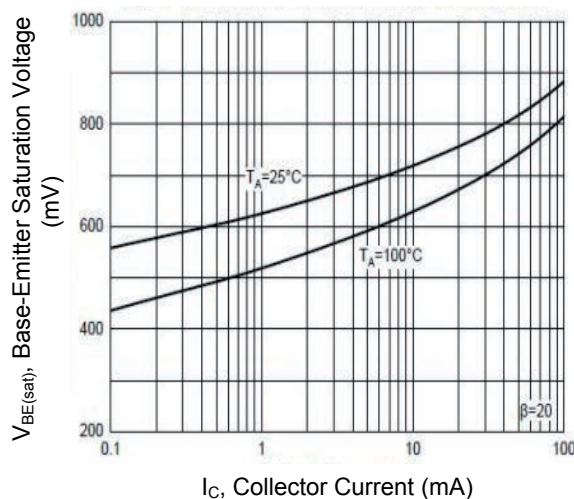


Figure 3. Base-Emitter Saturation Voltage Characteristics

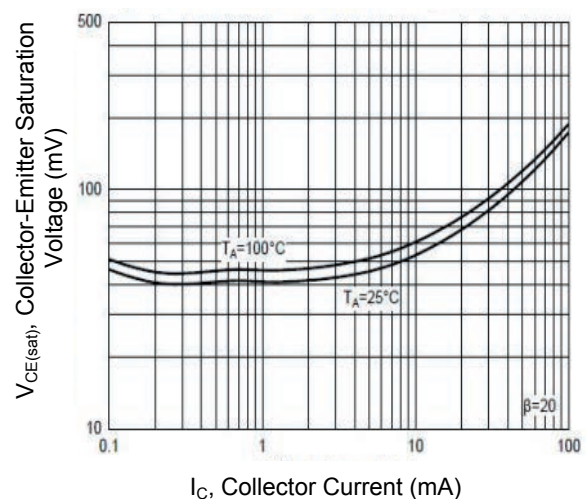


Figure 4. Collector-Emitter Saturation Voltage Characteristics

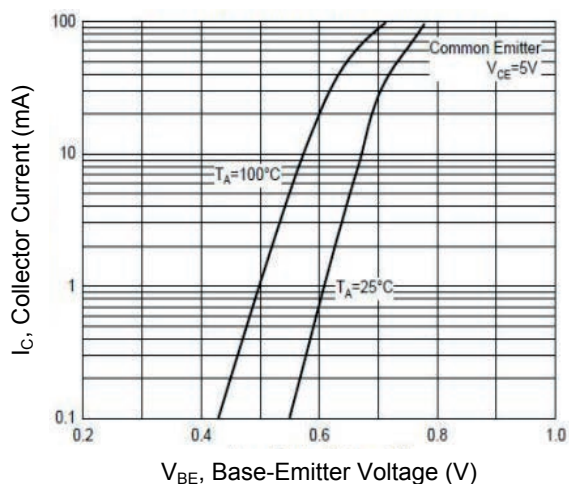


Figure 5. Base-Emitter Voltage Characteristics

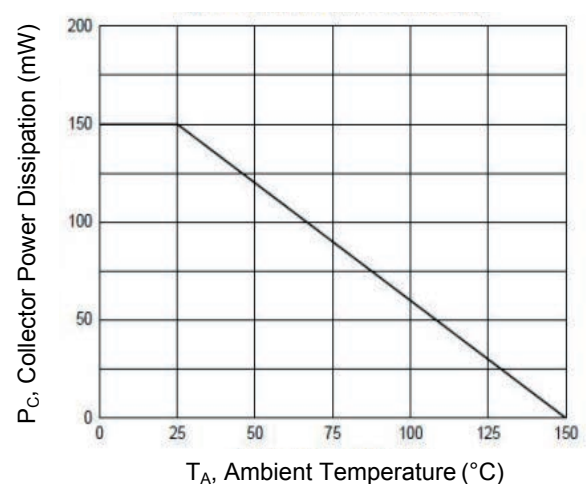
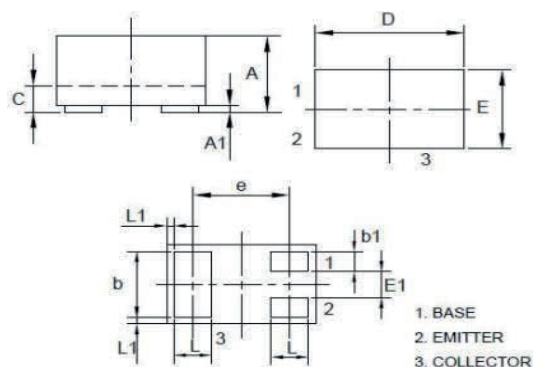


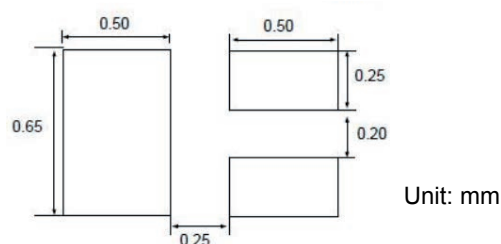
Figure 6. Collector Power Derating Curve

Package Outline Dimensions (DFN1006-3L)



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	0.450	0.550	0.018	0.022
A1	0.000	0.050	0.000	0.002
b	0.450	0.550	0.018	0.022
b1	0.100	0.200	0.004	0.008
C	0.120	0.180	0.005	0.007
D	0.950	1.075	0.037	0.042
E	0.550	0.675	0.022	0.026
E1	0.150	0.250	0.006	0.010
e	0.650 TYP		0.0256 BSC	
L	0.200	0.300	0.008	0.012
L1	0.050 TYP		0.002 REF	

Recommended Pad Layout



Order Information

Device	Package	Marking	Carrier	Quantity
GSBC846AM	DFN1006-3L	1A	Tape & Reel	10,000pcs / Reel
GSBC846BM	DFN1006-3L	1B	Tape & Reel	10,000pcs / Reel
GSBC847AM	DFN1006-3L	1E	Tape & Reel	10,000pcs / Reel
GSBC847CM	DFN1006-3L	1G	Tape & Reel	10,000pcs / Reel
GSBC848AM	DFN1006-3L	1J	Tape & Reel	10,000pcs / Reel
GSBC848BM	DFN1006-3L	1K	Tape & Reel	10,000pcs / Reel
GSBC848CM	DFN1006-3L	1L	Tape & Reel	10,000pcs / Reel