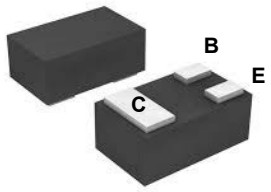
GOOD-ARK
SEMICONDUCTOR

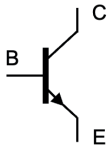
GSBC847xD
NPN Transistors

Features

- Epoxy meets UL 94 V-0 flammability rating
- RoHS compliant / Green EMC



DFN1006-3L



Schematic Diagram

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	100	mA
Collector Power Dissipation[1]	P_C	225	mW
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	556	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-55 to +150	℃

Electrical Characteristics (@ 25°C unless otherwise noted)

Parameter		Symbol	Test Conditions	Min	Typ	Max	Units
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C=10mA, I_B=0	45	-	-	V
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	I_C=10μA, I_E=0	50	-	-	V
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	I_E=10μA, I_C=0	6.0	-	-	V
Collector-Base Cutoff Current		I_{CBO}	V_{CB}=50V, I_E=0V	-	-	100	nA
Collector-Emitter Cutoff Current		I_{CEO}	V_{CE}=45V, I_B=0	-	-	100	nA
Emitter Cutoff Current		I_{EBO}	V_{EB}=5V, I_C=0	-	-	100	nA
DC Current Gain[2]	GSBC847AD	h_{FE}	V_{CE}=5V, I_C=2mA	110	-	220	-
	GSBC847BD			200	-	450	
	GSBC847CD			420	-	800	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=100mA, I_B=5mA	-	-	0.5	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C=100mA, I_B=5mA	-	-	1.1	V
Transition Frequency		f_T	I_C=10mA, V_{CE}=5V, F=100MHz	100	-	-	MHZ
Collector Output Capacitance		C_{ob}	V_{CB}=10V, F=1MHz	-	-	4.5	pF

Notes:

1. Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.
2. Pluse width ≤ 300us, duty cycle ≤ 2.0%.

Typical Characteristic Curves

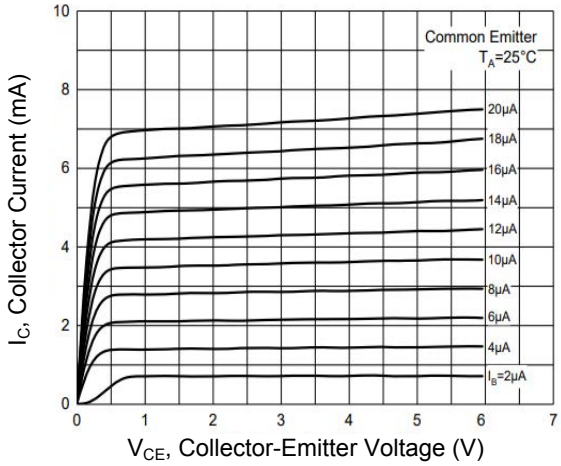


Figure 1. Static Characteristics

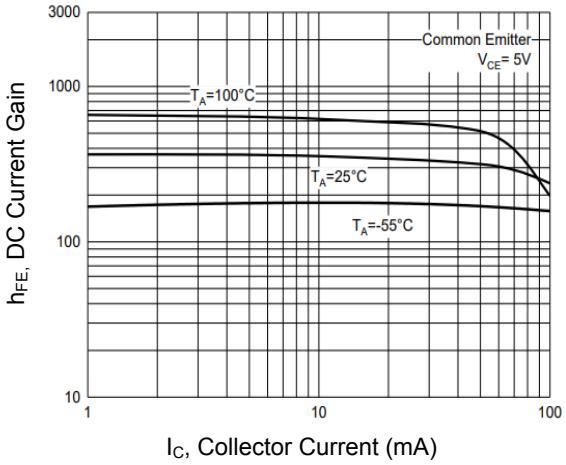


Figure 2. DC Current Gain Characteristics

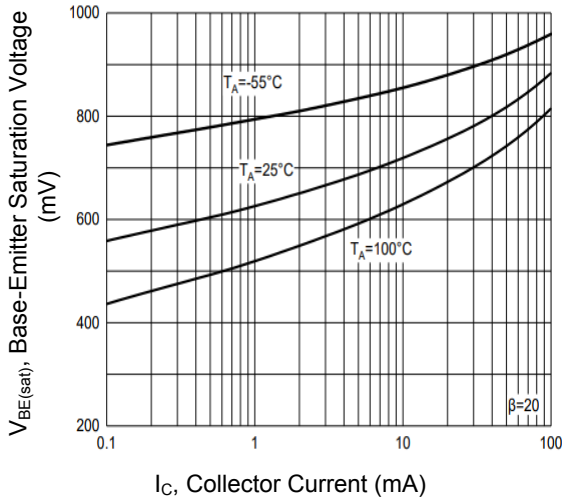


Figure 3. Base-Emitter Saturation Voltage Characteristics

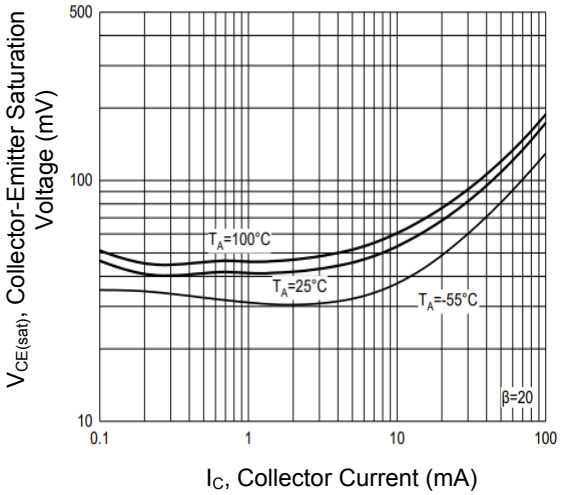


Figure 4. Collector-Emitter Saturation Voltage Characteristics

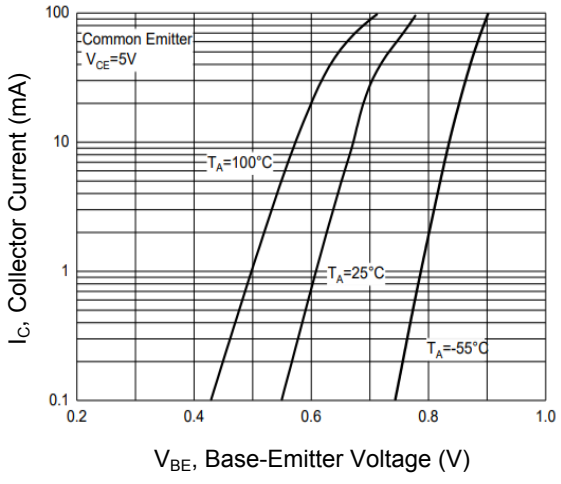


Figure 5. Base-Emitter Voltage Characteristics

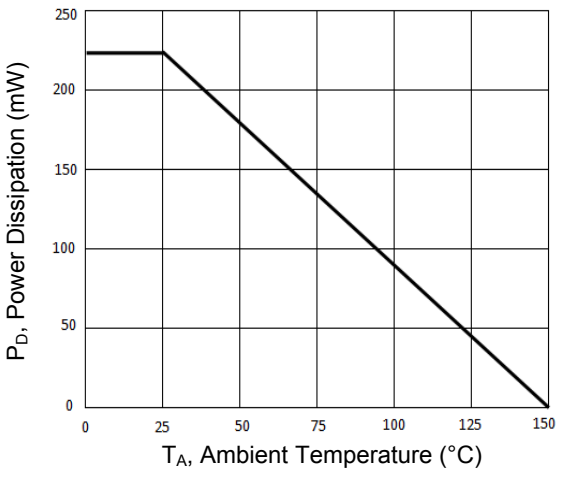
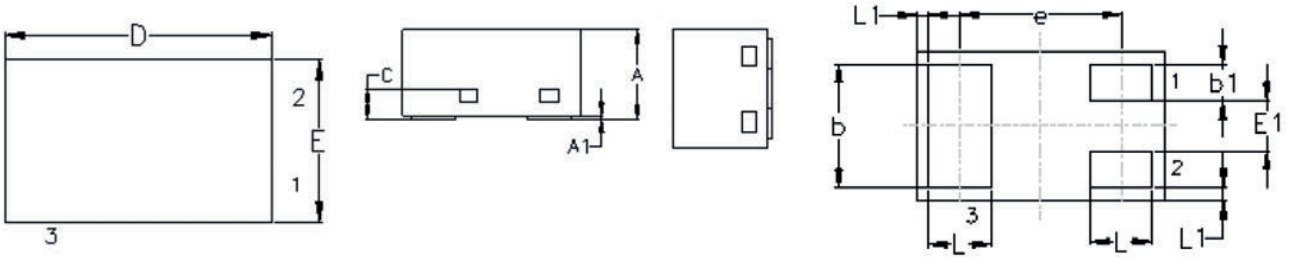


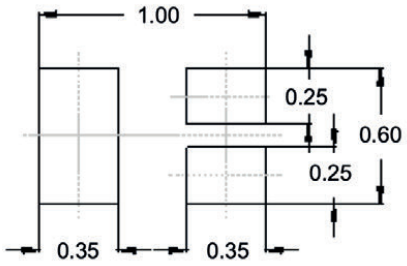
Figure 6. Collector Power Derating Curve

Package Outline Dimensions (DFN1006-3L)



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	0.45	0.55	0.018	0.022
A1	0.00	0.05	0.000	0.002
b	0.45	0.55	0.018	0.022
b1	0.10	0.20	0.004	0.008
C	0.12	0.18	0.005	0.007
D	0.95	1.05	0.037	0.041
E	0.55	0.65	0.022	0.026
E1	0.15	0.25	0.006	0.010
e	0.65 BSC		0.0256 BSC	
L	0.20	0.30	0.008	0.012
L1	0.05 REF		0.002 REF	

Recommended Pad Layout



Unit: mm

Order Information

Device	Package	Marking	Carrier	Quantity
GSBC847AD	DFN1006-3L	1E	Tape & Reel	10,000pcs / Reel
GSBC847BD	DFN1006-3L	1F	Tape & Reel	10,000pcs / Reel
GSBC847CD	DFN1006-3L	1G	Tape & Reel	10,000pcs / Reel