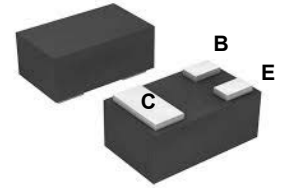


**Features**

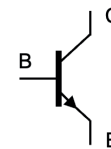
- Collector current  $I_C=200\text{mA}$
- Collector-emitter voltage  $V_{CEO}=40\text{V}$
- Rugged and reliable



DFN1006-3L

**Applications**

- General switching and amplification



Schematic Diagram

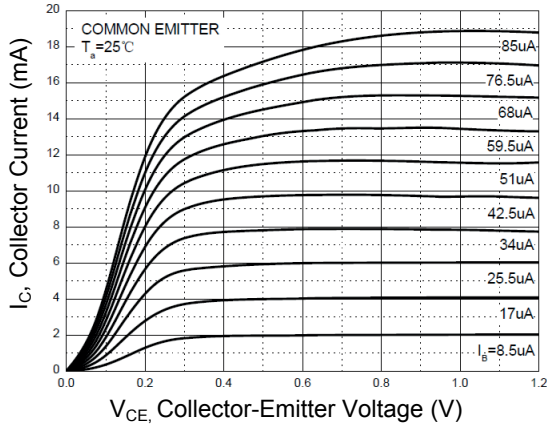
**Absolute Maximum Ratings** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	40	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Continuous Collector Current	$I_C$	200	mA
Peak Collector Current	$I_{CM}$	200	mA
Power Dissipation	$P_D$	100	mW
Operating Junction / Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	1250	$^\circ\text{C/W}$

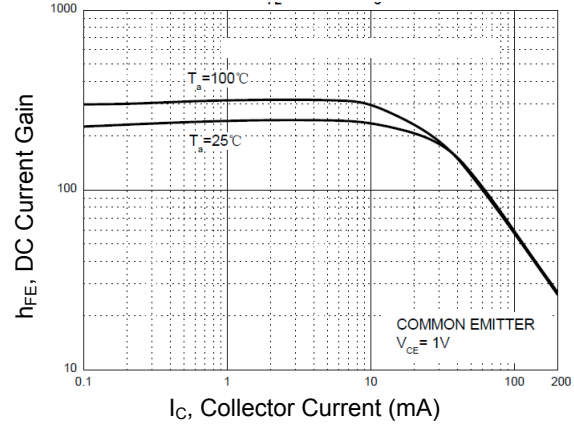
**Electrical Characteristics** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Max	Units
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	60	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	40	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6	-	V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=60\text{V}, I_E=0$	-	0.1	$\mu\text{A}$
Collector Cut-Off Current	$I_{CEX}$	$V_{CE}=30\text{V}, V_{BE(OFF)}=3\text{V}$	-	50	nA
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$	-	0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=1\text{V}, I_C=10\text{mA}$	100	300	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50\text{mA}, I_B=5\text{mA}$	-	0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=50\text{mA}, I_B=5\text{mA}$	-	0.95	V
Transition Frequency	$f_T$	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	300	-	MHz
Delay Time	$t_d$	$V_{CC}=3\text{V}, V_{BE(OFF)}=0.5\text{V},$ $I_C=10\text{mA}, I_{B1}=1\text{mA}$	-	35	ns
Rise Time	$t_r$		-	35	ns
Storage Time	$t_s$	$V_{CC}=3\text{V}, I_C=10\text{mA},$ $I_{B1}=I_{B2}=1\text{mA}$	-	200	ns
Fall Time	$t_f$		-	50	ns

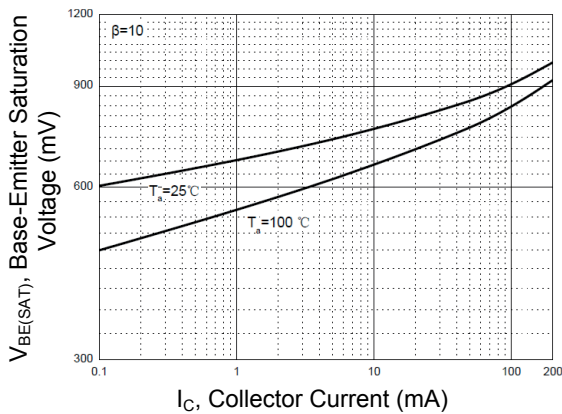
**Typical Electrical and Thermal Characteristic Curves**



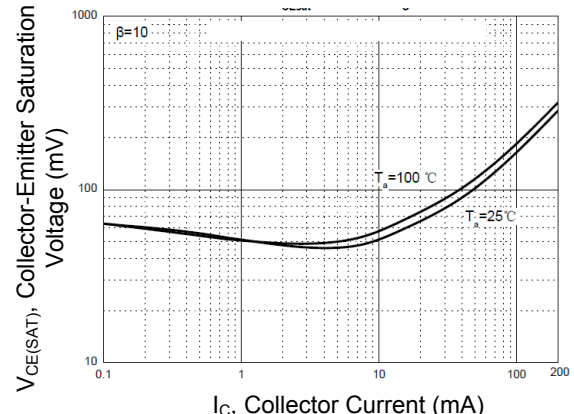
**Figure 1. Static Characteristic**



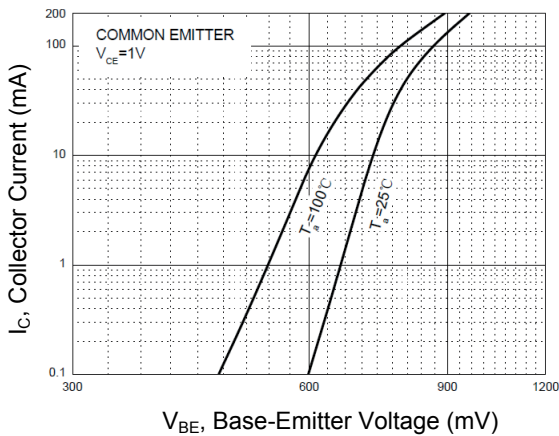
**Figure 2. DC Current Gain**



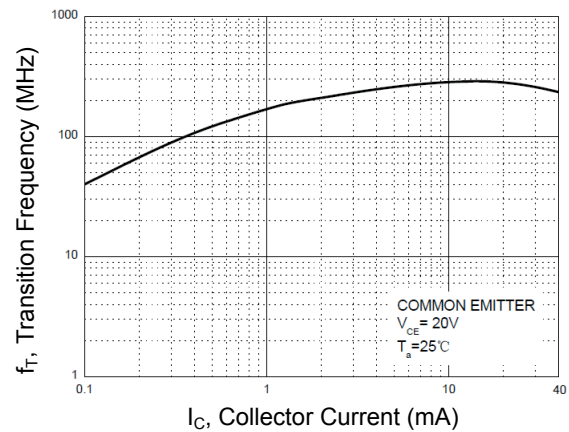
**Figure 3. Base-Emitter Saturation Voltage vs. Collector Current**



**Figure 4. Collector-Emitter Saturation Voltage vs. Collector Current**

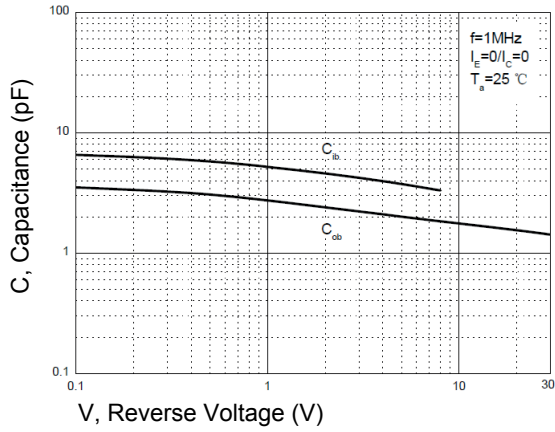


**Figure 5. Collector Current vs. Base - Emitter Voltage**

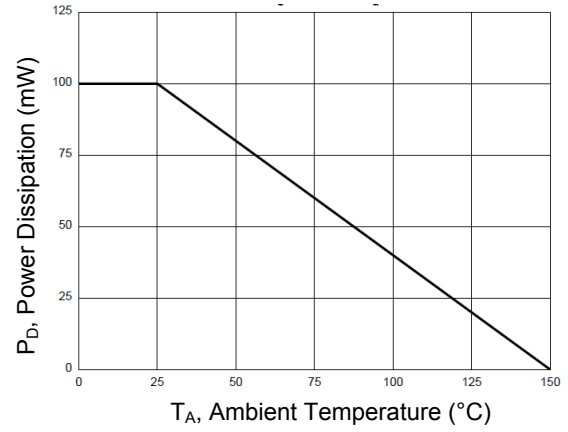


**Figure 6. Transition Frequency vs. Collector Current**

**Typical Electrical and Thermal Characteristic Curves**

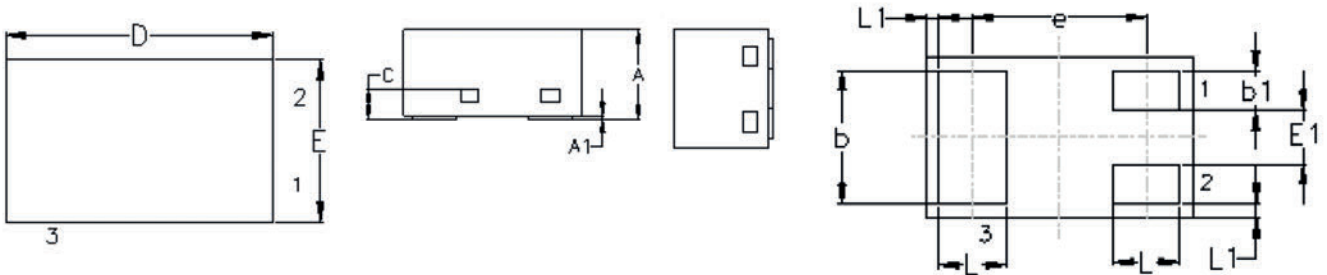


**Figure 7. Capacitance Characteristics**



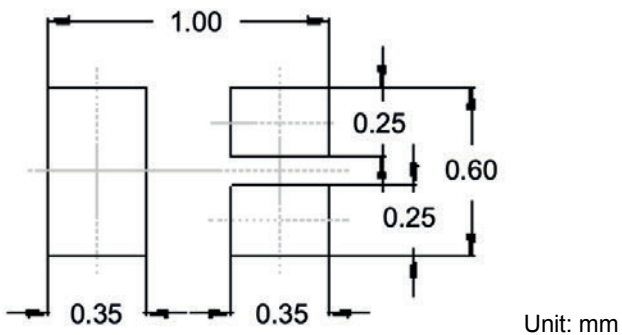
**Figure 8. Power Derating Curve**

**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**



**Order Information**

Device	Package	Marking	Carrier	QTY
GSTR2040	DFN1006-3L	1N	Tape & Reel	10,000 / 7" Reel