

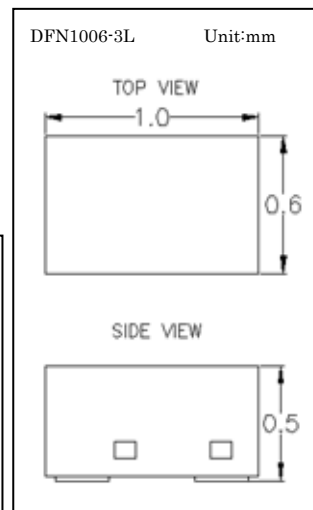
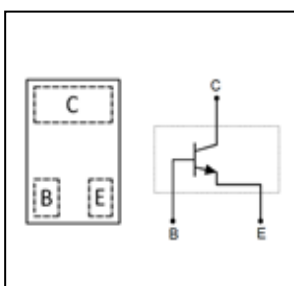
DATA SHEET (Preliminary)

MMBT2222AD2

- ◇ Capable of 250 mWatts of Power Dissipation
- ◇ Operating and Storage Junction Temperatures: -55°C to 150°C
- ◇ Epoxy Meets UL 94 V-0 Flammability Rating
- ◇ RoHS compliant / Green EMC

Device Marking Code	
MMBT2222AD2	M3

Circuit Diagram



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

Symbol	Parameter	Value	Unit
V_{CB0}	Collector-Base Voltage	75	V
V_{CE0}	Collector-Emitter Voltage	40	V
V_{EB0}	Emitter-Base Voltage	6	V
I_C	Collector Current	600	mA
I_{CM}	peak collector current	800	mA
I_{BM}	peak base current	200	mA
P_C	Collector Power Dissipation	250	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	$^{\circ}\text{C}/\text{W}$
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	$-55 \sim +150$	$^{\circ}\text{C}$

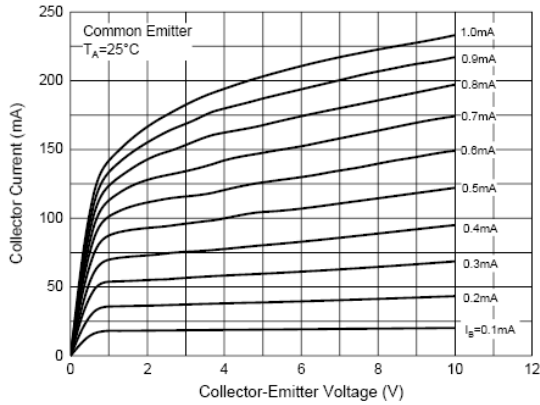
Electrical Characteristics @ 25° C Unless Otherwise Specified

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
V_{CE0}	Collector-Emitter Breakdown Voltage	$I_C=2mA, I_B=0$	40			V
V_{CB0}	Collector-Base Breakdown Voltage	$I_C=100\mu A, I_E=0$	75			V
V_{EB0}	Emitter-Base Breakdown Voltage	$I_E=100\mu A, I_C=0$	6.0			V
I_{CB0}	Collector cut-off current	$V_{CB}=60V, I_E=0$			100	nA
I_{CEX}	Collector Cutoff Current	$V_{CE}=60V, V_{BE}=3.0V$			10	nA
I_{EBO}	emitter-base cut-off current	$V_{EB} = 5 V; I_C = 0 A$			100	nA
h_{FE}	DC Current Gain	$I_C=0.1mA, V_{CE}=10V$ $I_C=1.0mA, V_{CE}=10V$ $I_C=10mA, V_{CE}=10V$ $I_C=150mA, V_{CE}=10V$ $I_C=150mA, V_{CE}=1.0V$ $I_C=500mA, V_{CE}=10V$	35 50 75 100 50 40		300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=150mA, I_B=15mA$ $I_C=500mA, I_B=50mA$			0.3 1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=150mA, I_B=15mA$ $I_C=500mA, I_B=50mA$	0.6		1.2 2.0	V
f_T	Current Gain-Bandwidth Product	$I_C=20mA,$ $V_{CE}=20V, f=100MHz$		300		MHZ
C_{ob}	Collector-Base Capacitance	$V_{CB}=10V, I_E=0,$ $f=1.0MHz$			8.0	PF
C_{ib}	Emitter-Base Capacitance	$V_{BE}=0.5V, I_C=0,$ $f=1.0MHz$			25	PF

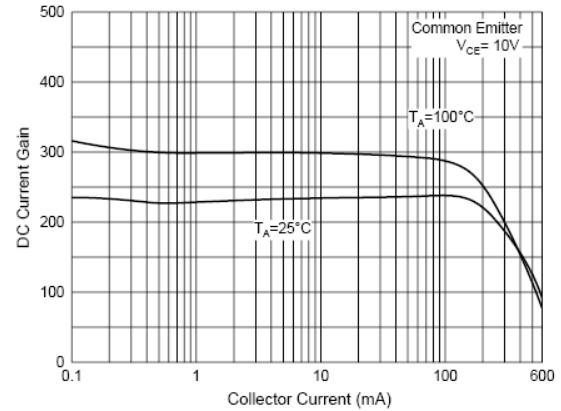
Switching Characteristics

Symbol	Parameter	Test Conditions	Min	Max	Units
t_d	Delay Time	$V_{CC}=30V, V_{BE}=0.5V$ $I_C=150mA, I_{B1}=15mA$		10	ns
t_r	Rise Time			25	ns
t_s	Storage Time	$V_{CC}=30V, I_C=150mA$ $I_{B1}=I_{B2}=15mA$		225	ns
t_f	Fall Time			60	ns

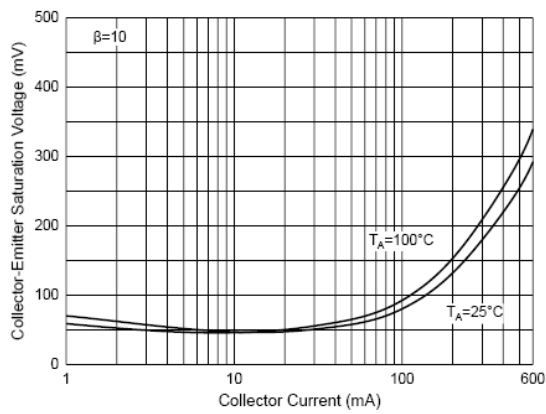
Typical Characteristics



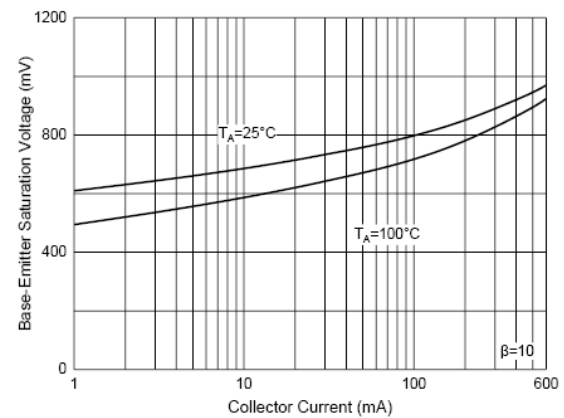
Static Characteristics



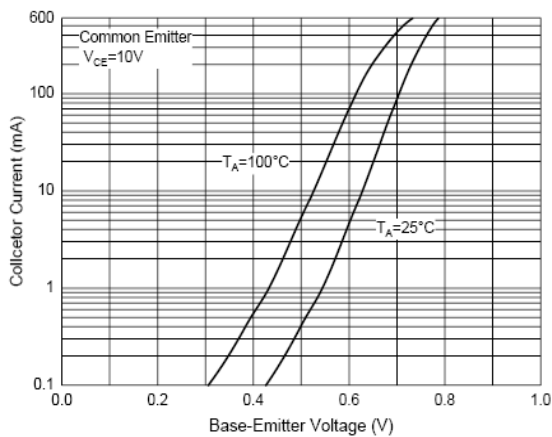
DC Current Gain Characteristics



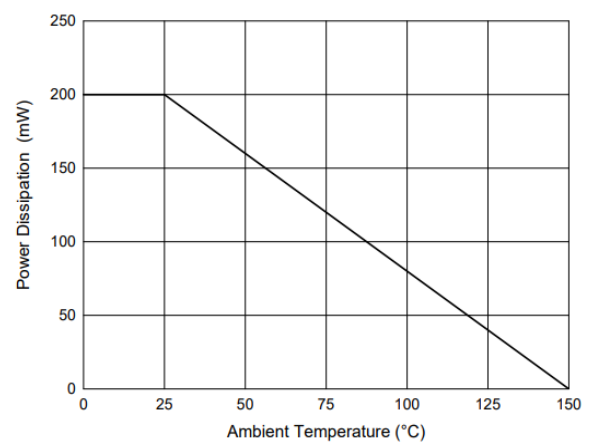
Collector-Emitter Saturation Voltage



Base-Emitter Saturation Voltage



Base-Emitter Voltage Characteristics

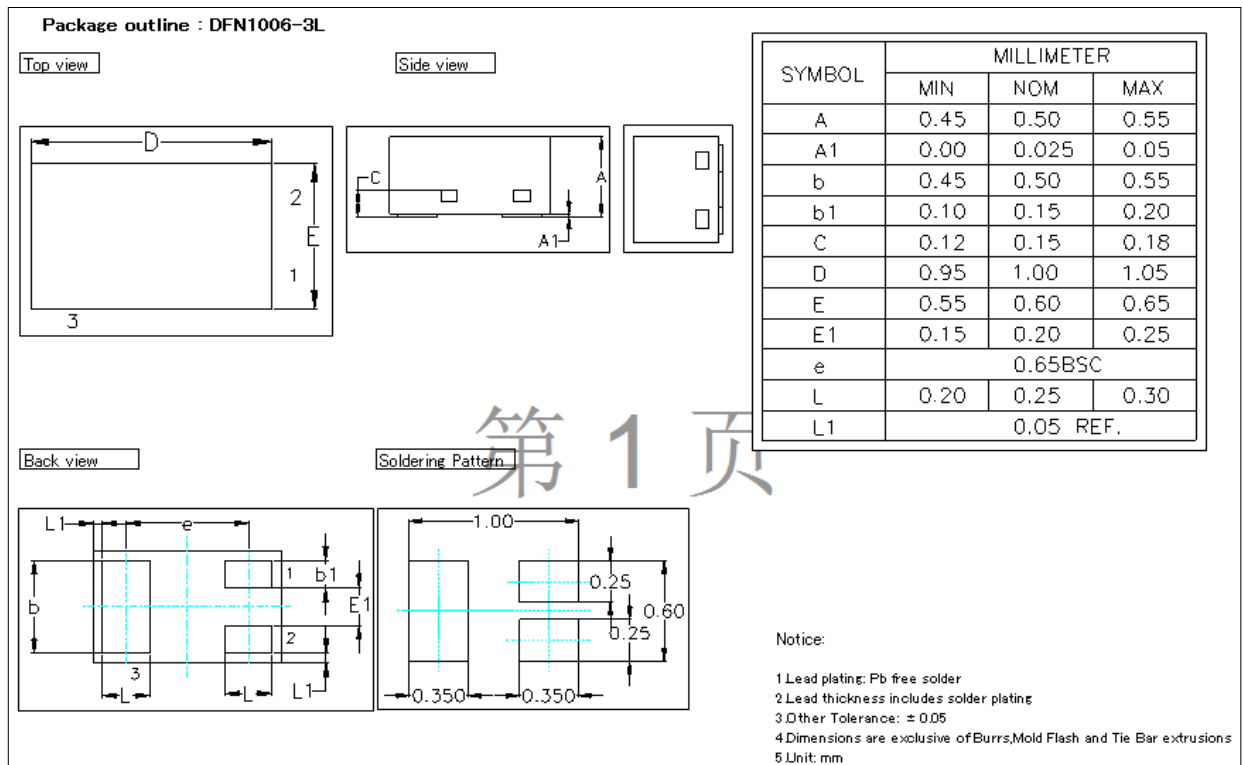


Collector Power Derating Curve

Ordering Information

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
MMBT2222AD2	DFN1006-3L	Tape & Reel 10000pcs /7" Reel	8mm	4mm	Conductive	

Package Dimensions



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