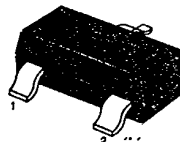


MMBT2222**NPN EPITAXIAL SILICON TRANSISTOR****GENERAL PURPOSE TRANSISTOR****ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	60	V
Collector-Emitter Voltage	V_{CE0}	30	V
Emitter-Base Voltage	V_{EB0}	5	V
Collector Current	I_C	600	mA
Collector Dissipation	P_C	350	mW
Storage Temperature	T_{stg}	150	$^\circ\text{C}$

SOT-23



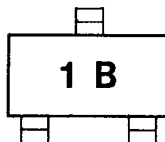
1. Base 2. Emitter 3. Collector

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector-Base Breakdown Voltage	BV_{CB0}	$I_C = 10\mu\text{A}$, $I_E = 0$	60		V
Collector-Emitter Breakdown Voltage	BV_{CE0}	$I_C = 10\text{mA}$, $I_B = 0$	30		V
Emitter-Base Breakdown Voltage	BV_{EB0}	$I_E = 10\mu\text{A}$, $I_C = 0$	5		V
Collector Cutoff Current	I_{CEX}	$V_{CE} = 60\text{V}$, $V_{BE} = 3\text{V}$		10	nA
Collector Cutoff Current	I_{CBO}	$V_{CB} = 50\text{V}$, $I_E = 0$		0.01	μA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{V}$, $I_C = 0.1\text{mA}$	35		
		$V_{CE} = 10\text{V}$, $I_C = 1.0\text{mA}$	50		
		$V_{CE} = 10\text{V}$, $I_C = 10\text{mA}$	75		
		* $V_{CE} = 10\text{V}$, $I_C = 150\text{mA}$	100	300	
		* $V_{CE} = 10\text{V}$, $I_C = 500\text{mA}$	30		
*Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 150\text{mA}$, $I_B = 15\text{mA}$		0.4	V
		$I_C = 500\text{mA}$, $I_B = 50\text{mA}$		1.6	V
*Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 150\text{mA}$, $I_B = 15\text{mA}$		1.3	V
		$I_C = 500\text{mA}$, $I_B = 50\text{mA}$		2.6	V
Current Gain-Bandwidth Product	f_T	$I_C = 20\text{mA}$, $V_{CE} = 20\text{V}$ $f = 100\text{MHz}$	250		MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$ $f = 1.0\text{MHz}$		8.0	pF
Turn On Time	t_{on}	$V_{CC} = 30\text{V}$, $V_{BE} = 0.5\text{V}$ $I_C = 150\text{mA}$, $I_{B1} = 15\text{mA}$		35	ns
Turn Off Time	t_{off}	$V_{CC} = 30\text{V}$, $I_C = 150\text{mA}$ $I_{B1} = I_{B2} = 15\text{mA}$		285	ns

*Pulse test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

Marking



SAMSUNG SEMICONDUCTOR

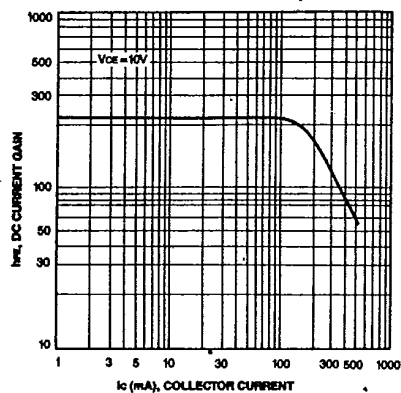
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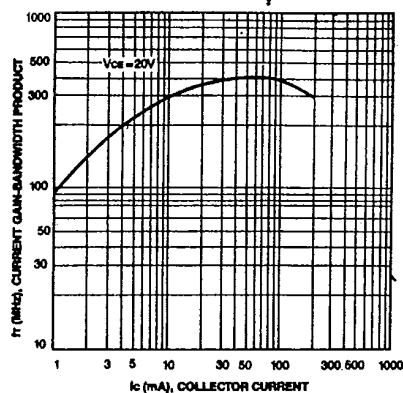
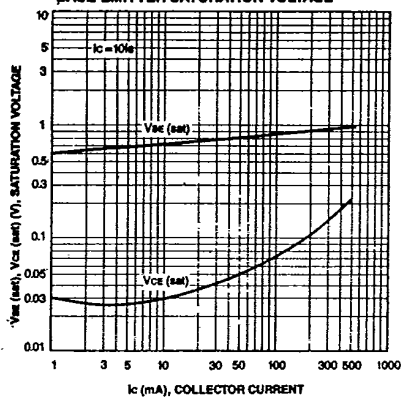
NPN EPITAXIAL SILICON TRANSISTOR

T-29.19

DC CURRENT GAIN



CURRENT GAIN-BANDWIDTH PRODUCT

COLLECTOR-EMITTER SATURATION VOLTAGE
BASE-EMITTER SATURATION VOLTAGE

OUTPUT CAPACITANCE

