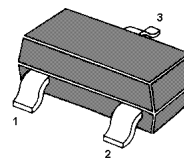


# MMBT5089

## NPN General Purpose Amplifier

For low noise, high gain, general purpose amplifier applications



1. Base 2. Emitter 3. Collector  
SOT-23 Plastic Package

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	30	V
Collector Emitter Voltage	$V_{CEO}$	25	V
Emitter Base Voltage	$V_{EBO}$	4.5	V
Collector Current - Continuous	$I_C$	100	mA
Total Device Dissipation	$P_{tot}$	200	mW
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	- 55 to + 150	$^\circ\text{C}$

### Characteristics at $T_{amb}=25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 5\text{ V}, I_C = 100\text{ }\mu\text{A}$	$h_{FE}$	400	1200	-
at $V_{CE} = 5\text{ V}, I_C = 1\text{ mA}$	$h_{FE}$	450	-	-
at $V_{CE} = 5\text{ V}, I_C = 10\text{ mA}$	$h_{FE}$	400	-	-
Collector Base Cutoff Current at $V_{CB} = 15\text{ V}$	$I_{CBO}$	-	50	nA
Emitter Base Cutoff Current at $V_{EB} = 3\text{ V}$	$I_{EBO}$	-	50	nA
at $V_{EB} = 4.5\text{ V}$		-	100	
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$	30	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	25	-	V
Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}, I_B = 1\text{ mA}$	$V_{CE(sat)}$	-	0.5	V
Base Emitter On Voltage at $V_{CE} = 5\text{ V}, I_C = 10\text{ mA}$	$V_{BE(on)}$	-	0.8	V
Gain Bandwidth Product at $V_{CE} = 5\text{ V}, I_C = 500\text{ }\mu\text{A}, f = 20\text{ MHz}$	$f_T$	50	-	MHz
Collector Output Capacitance at $V_{CB} = 5\text{ V}, f = 100\text{ KHz}$	$C_{ob}$	-	4	pF

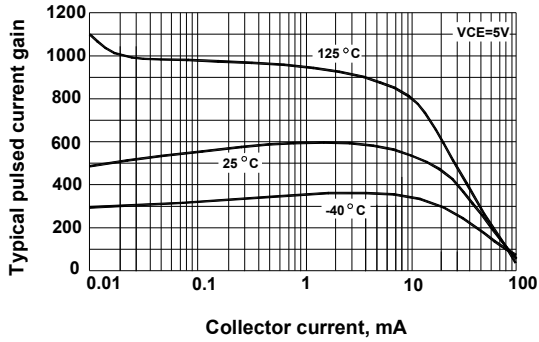
**TOP DYNAMIC**



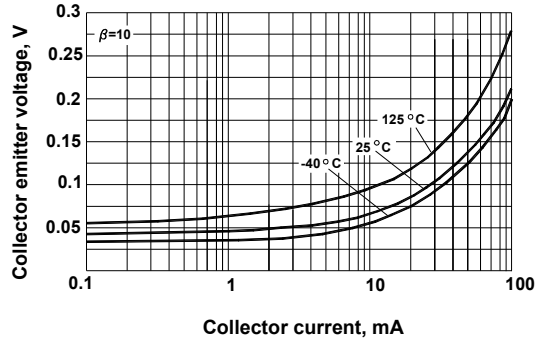
ISO 14001 : 2004 Certificate No. 121505007  
ISO 9001 : 2008 Certificate No. 50114012  
OHSAS 18001 : 2007 Certificate No. 0513150806  
IECQ QC 080000 Certificate No. 0513150806

Dated : 08/08/2012 Rev : 01

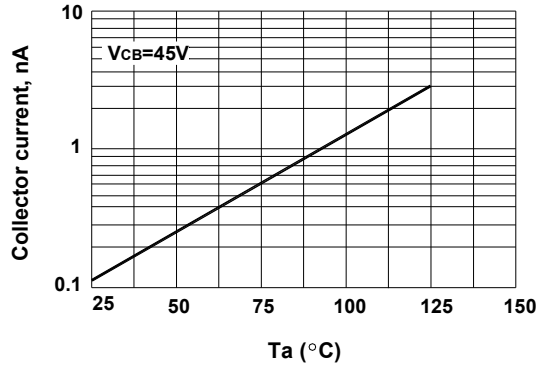
Typical pulsed current gain vs. collector current



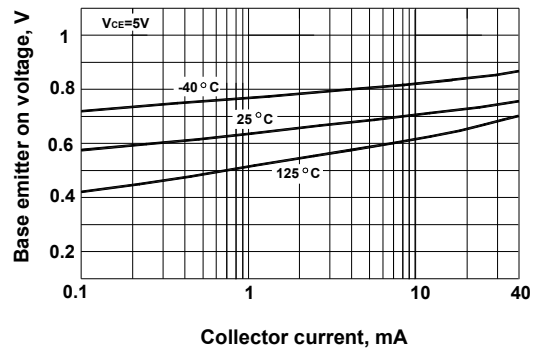
Collector emitter saturation voltage vs. collector current



Collector cutoff current vs. ambient temperature



Base emitter on voltage vs. collector current



Power Dissipation vs Ambient Temperature

