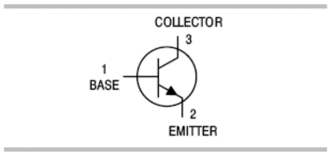
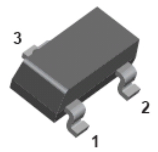
Silicon Epitaxial Planar Transistor **MMBT5088/5089**

FEATURES

- Excellent H_{FE} Linearity.
- Power dissipation.(P_C=0.2W).

Lead-free





SOT-23

APPLICATIONS

- This device is designed for low noise,high gain,general purpose amplifier applications at collector currents from 1μA to 50mA.

ORDERING INFORMATION

Type No.	Marking	Package Code
MMBT5088	1Q	SOT-23
MMBT5089	1R	SOT-23

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter		Value	Units
V_{CBO}	Collector-Base Voltage	MMBT5088 MMBT5089	35 30	V
V_{CEO}	Collector-Emitter Voltage	MMBT5088 MMBT5089	30 25	V
V_{EBO}	Emitter-Base Voltage		4.5	V
I_C	Collector Current -Continuous		100	mA
P_C	Collector Dissipation		350	mW
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient		357	℃/W
$T_{j,}T_{stg}$	Junction and Storage Temperature		-55 to +150	℃

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter	**Symbol**	**Test conditions**	**MIN**	**TYP**	**MAX**	**UNIT**
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA,I_E=0 5088 5089	35 30			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1.0mA,I_B=0 5088 5089	30 25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-100μA,I_C=0	4.5			V
Collector cut-off current	I_{CBO}	V_{CB}=20V,I_E=0 5088 V_{CB}=15V,I_E=0 5089			50	nA
Emitter cut-off current	I_{EBO}	V_{EB}=3V,I_C=0 V_{EB}=4.5V,I_C=0			50 100	nA
DC current gain	h_{FE}	V_{CE}=5V,I_C=100μA 5088 5089 V_{CE}=5V,I_C=1mA 5088 5089 V_{CE}=5V,I_C=10mA 5088 5089	300 400 350 450 300 400		900 1200	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA, I_B=1mA			0.5	V
Base-emitter on voltage	$V_{BE(on)}$	I_C=10mA, V_{CE}=5.0V			0.8	V
Transition frequency	f_T	V_{CE}=5V, I_C=0.5mA f=20MHz	50			MHz
Collector-Base capacitance	C_{cb}	V_{CB}=5V, I_E=0,f=100KHz			4.0	pF
Emitter-Base capacitance	C_{eb}	V_{BE}=0.5V,I_C=0, f=100KHz			10	pF
Noise Figure	NF	V_{CE}=5V,I_C=100μA, 5088 R_S=10kΩ, 5089 f=10Hz to15.7kHz			3.0 2.0	dB dB

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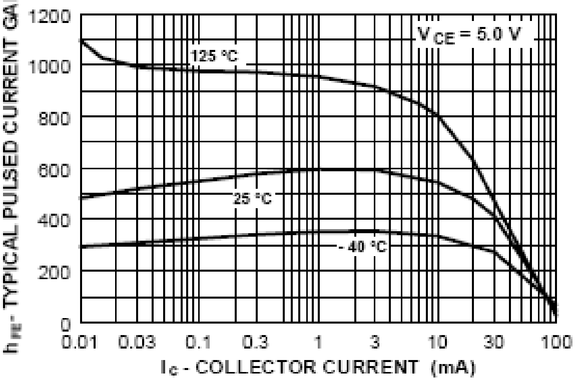
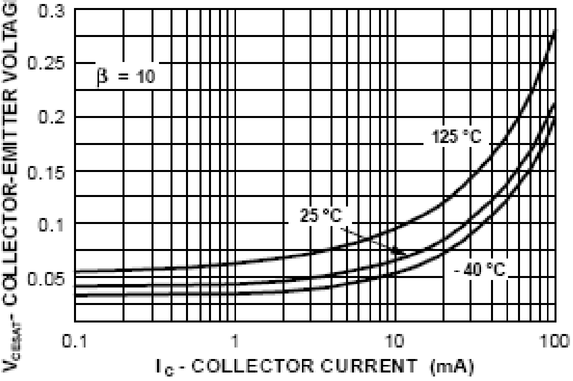
TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

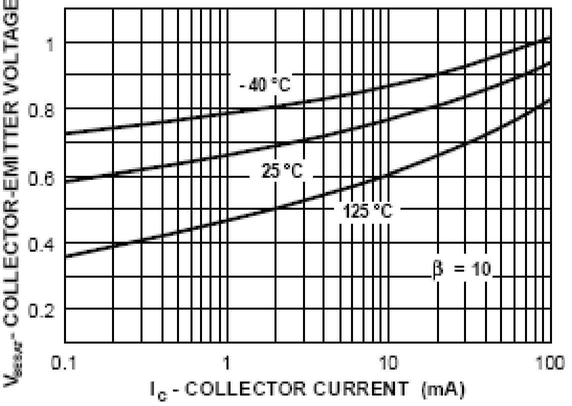
Typical Pulsed Current Gain vs Collector Current



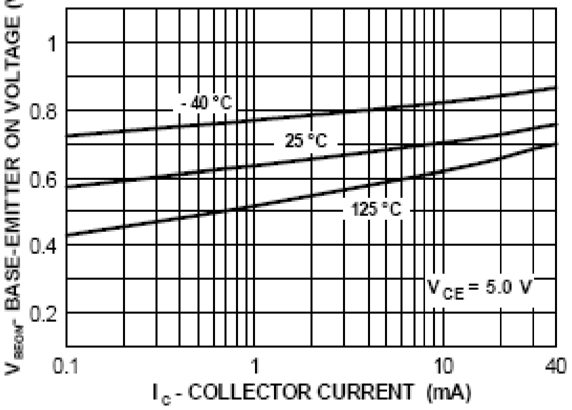
Collector-Emitter Saturation Voltage vs Collector Current



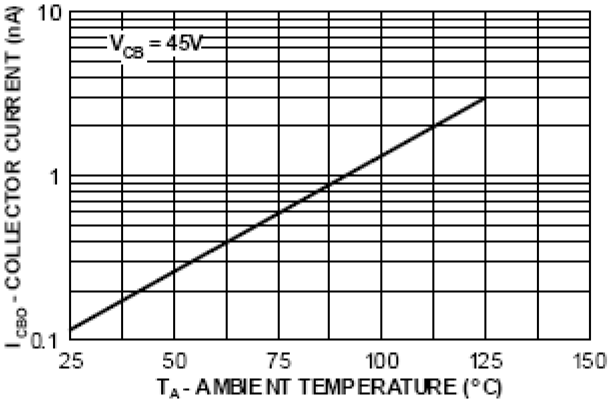
Base-Emitter Saturation Voltage vs Collector Current



Base-Emitter ON Voltage vs Collector Current

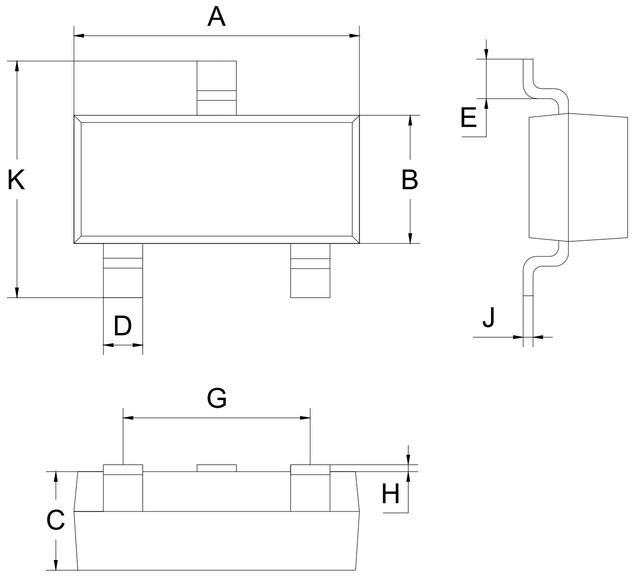


Collector-Cutoff Current vs Ambient Temperature



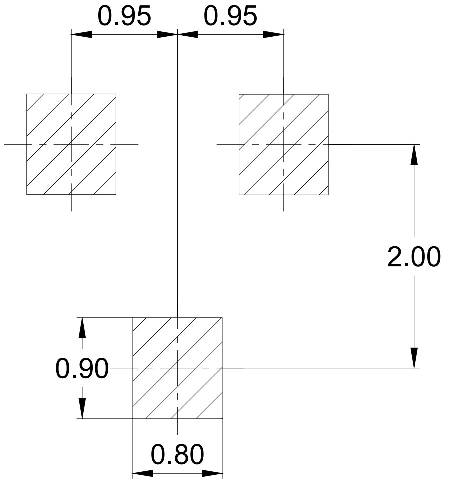
PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	1.0 Typical	
D	0.4 Typical	
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.1 Typical	
K	2.20	2.60
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
MMBT5088/5089	SOT-23	3000/Tape&Reel