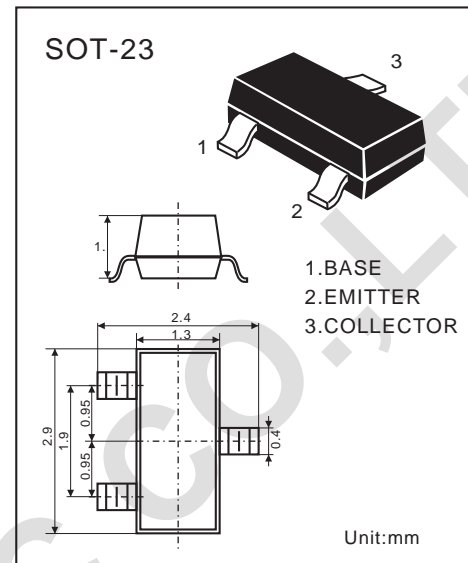


### NPN EPITAXIAL SILICON TRANSISTOR

#### PRF-AMPLIFIER, LOW LEVEL & LOW NOISE

- Complements MMPT9015LT1
- Collector-current:  $I_C=100\text{mA}$
- Collector-Emmitter Voltage:  $V_{CE}=45\text{V}$
- High Totalpower Dissipation  $P_C=225\text{mW}$
- High life And Good Linearity



#### ABSOLUTE MAXIMUM RATINGS

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emmitter Voltage	$V_{CEO}$	45	V
Emmitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	100	mA
Collector Dissipation $T_a=25^\circ\text{C}^*$	$P_D$	225	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$

#### Electrical Characteristics

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

Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Collector-Base Breakdown Voltage	$BV_{CBO}$	50			V	$I_C=100\mu\text{A}$ $I_E=0$
Collector-Emmitter Breakdown Voltage#	$BV_{CEO}$	45			V	$I_C=1\text{mA}$ $I_B=0$
Emmitter-Base Breakdown Voltage	$BV_{EBO}$	5			V	$I_E=100\mu\text{A}$ $I_C=0$
Collector-Base Cutoff Current	$I_{CBO}$			50	nA	$V_{CB}=50\text{V}$ , $V_C=0$
Emmitter-Base Cutoff Current	$I_{EBO}$			50	nA	$V_{CB}=5\text{V}$ , $I_C=0$
DC Current Gain	$H_{FE}$	60	300	1000		$V_{CE}=5\text{V}$ , $I_C=1\text{mA}$
Collector-Emmitter Saturation Voltage	$V_{CE(sat)}$			0.3	V	$I_C=100\text{mA}$ , $I_B=5\text{mA}$
Base-Emmitter Saturation Voltage	$V_{BE(sat)}$			1.00	V	$I_C=100\text{mA}$ , $I_B=5\text{mA}$
Base-Emmitter on Voltage	$V_{BE(on)}$	0.58	0.63	6.7	V	$V_{CE}=5\text{V}$ , $I_C=2\text{mA}$
Output Capacitance	$C_{ob}$		2.2	3.5	PF	$V_{CB}=10\text{V}$ , $I_E=10\text{mA}$ , $f=100\text{MHz}$
Current Gain-Bandwidth Product	$f_T$	150	270		MHz	$V_{CE}=5\text{V}$ $I_C=10\text{mA}$
Noise Figure	NF			10	dB	$V_{CE}=5\text{V}$ $I_C=0.2\text{mA}$
						$f=1\text{MHz}$ $R_s=2\text{Kohm}$

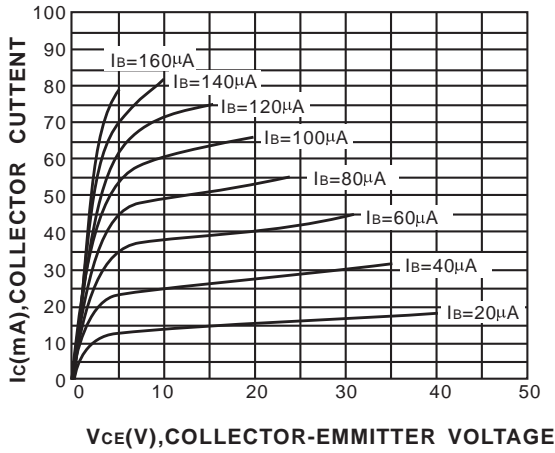
\*Total Device Dissipation:  $FR=1 \times 0.75 \times 0.062$  in Board Derate  $25^\circ\text{C}$

#Pulse Test: Pulse Width 300uS Duty cycle 2%

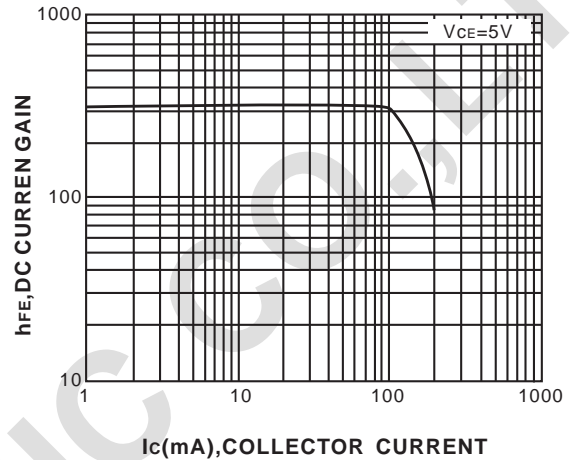
DEVICE MARKING:

MMBT9014LT1=L6

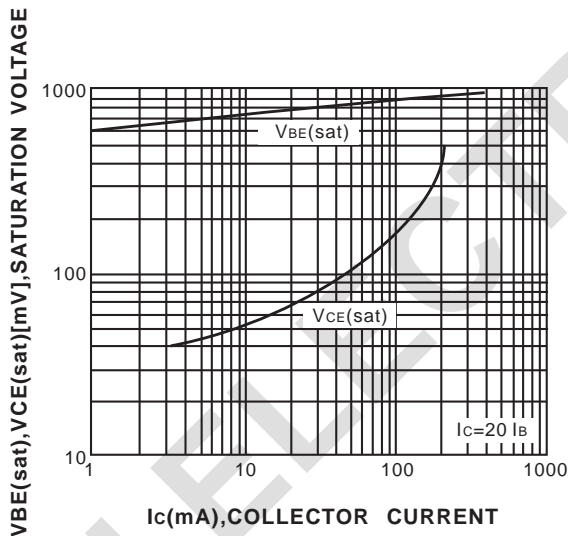
# Typical Characteristics



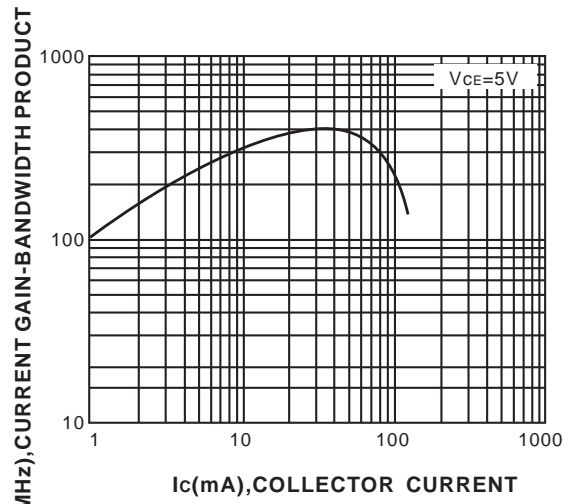
**Static Characteristic**



**DC Current Gain**



**Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



**Current Gain Bandwidth Product**