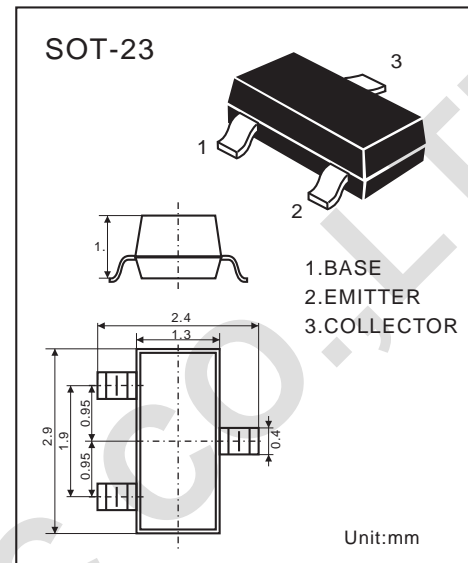


NPN EPITAXIAL SILICON TRANSISTOR

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	$V_{CE}=5\text{V}$ $I_C=0.2\text{mA}$
						$f=1\text{MHz}$ $R_s=2\text{Kohm}$

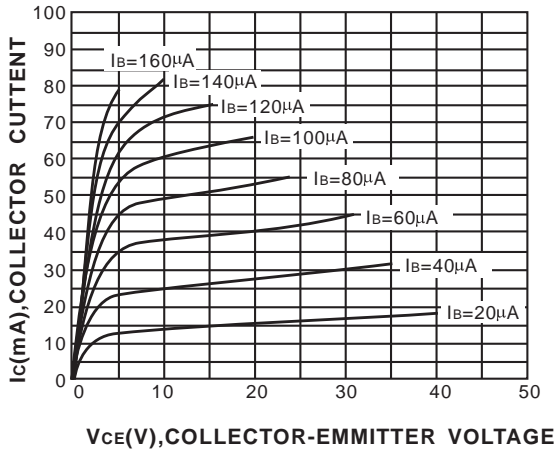
*Total Device Dissipation: $FR=1 \times 0.75 \times 0.062$ in Board Derate 25°C

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

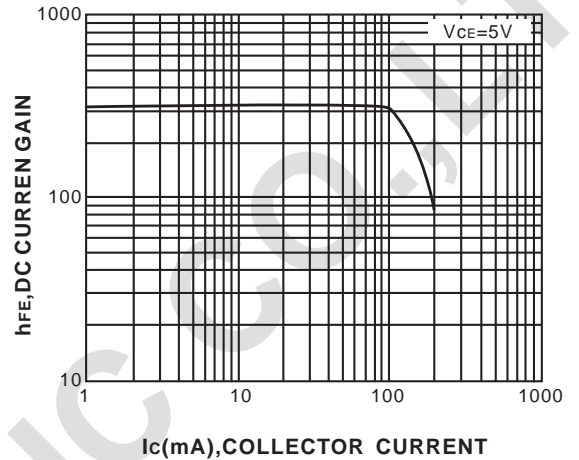
DEVICE MARKING:

MMBT9014LT1=L6

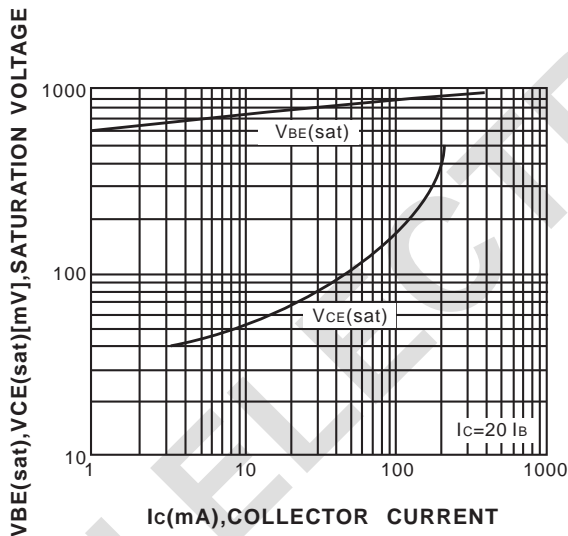
Typical Characteristics



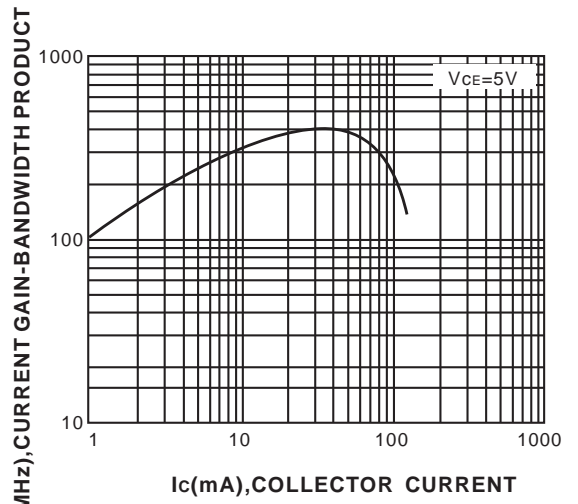
Static Characteristic



DC Current Gain



Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage



Current Gain Bandwidth Product