

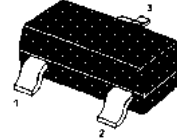
MMBT9014

NPN Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications

As complementary types the PNP

transistor MMBT9015 is recommended.



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

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

CHARACTERISTIC	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	45	Vdc
Collector-Base Voltage	V_{CBO}	50	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	Vdc
Collector Current-Continuous	I_C	150	mAdc
Base Current	I_B	30	mAdc

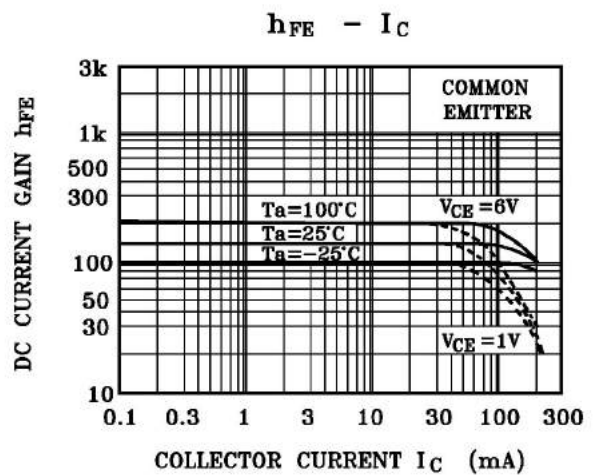
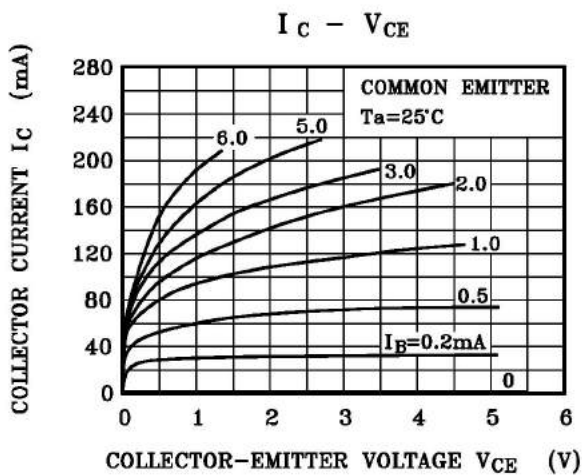
THERMAL CHARACTERISTICS

CHARACTERISTIC	Symbol	Max	Unit
Collector Power Dissipation	P_c	300	mW
Junction and Storage Temperature	$T_j,$ T_{stg}	150 , -55 ~150	$^{\circ}\text{C}$

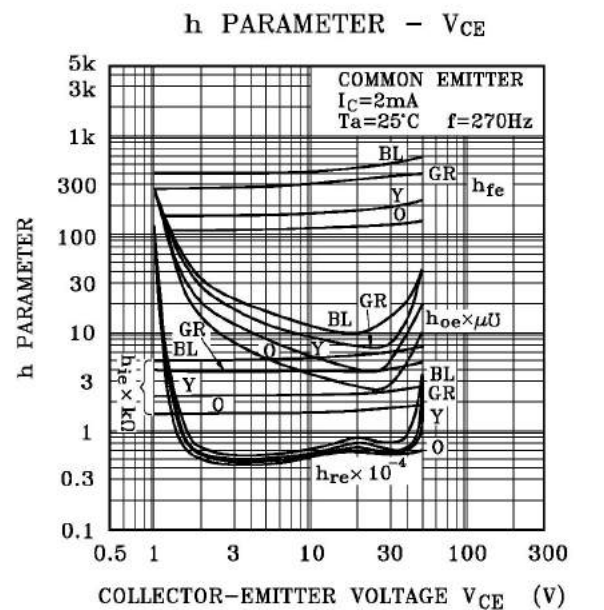
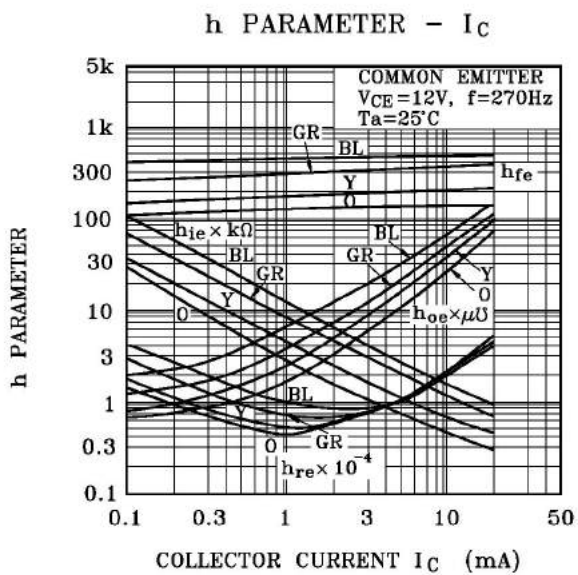
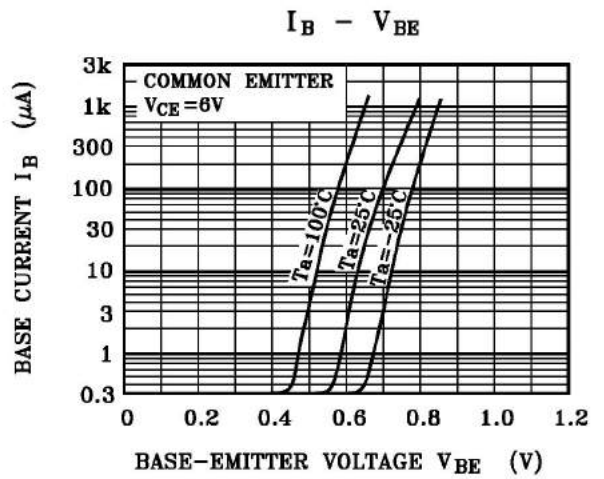
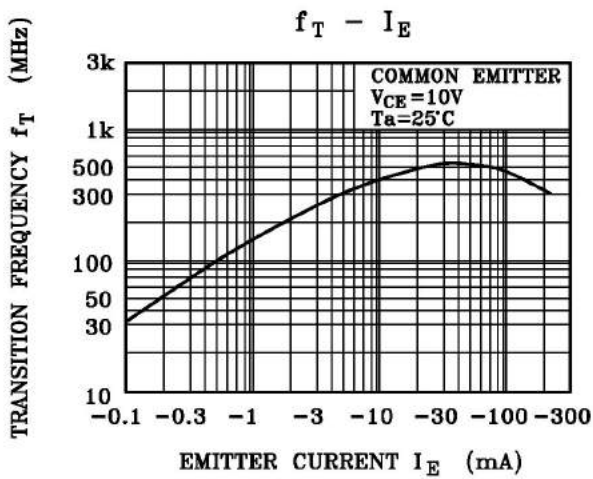
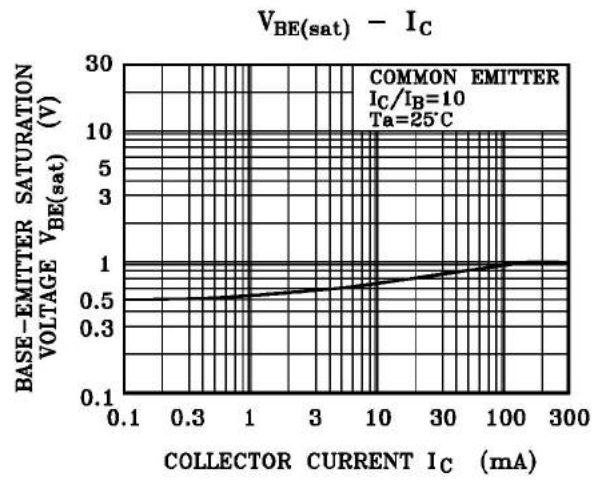
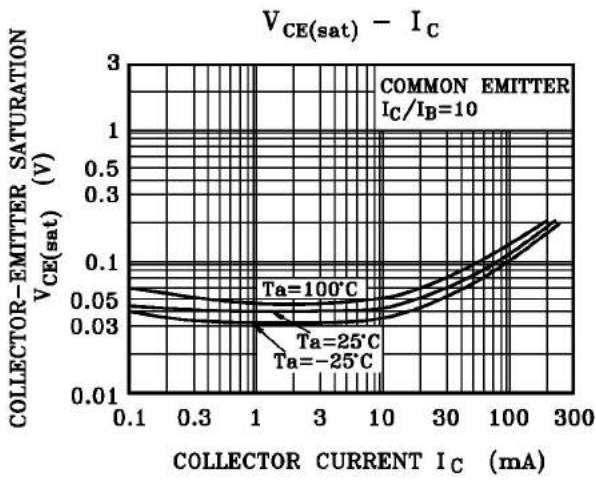
ELECTRICAL CHARACTERISTICS($T_A=25\text{ }^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Test Condition	Min	TYP	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=50V, I_E=0$	—	—	0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5V, I_C=0$	—	—	0.1	μA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$	50	—	—	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1.0\text{mA}$	45	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}$	5	—	—	V
DC Current Gain	h_{FE}	$V_{CE}=6V, I_C=2\text{mA}$	200	—	450	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100\text{mA}, I_B=5\text{mA}$	—	—	0.6	V
Base-Emitter Voltage	V_{BE}	$V_{CE}=5.0V, I_C=10\text{mA}$	—	—	0.82	V
Transition Frequency	f_T	$V_{CE}=5.0V, I_C=10\text{mA}$	100	180	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=1\text{MHz}$	—	4.0	7.0	pF

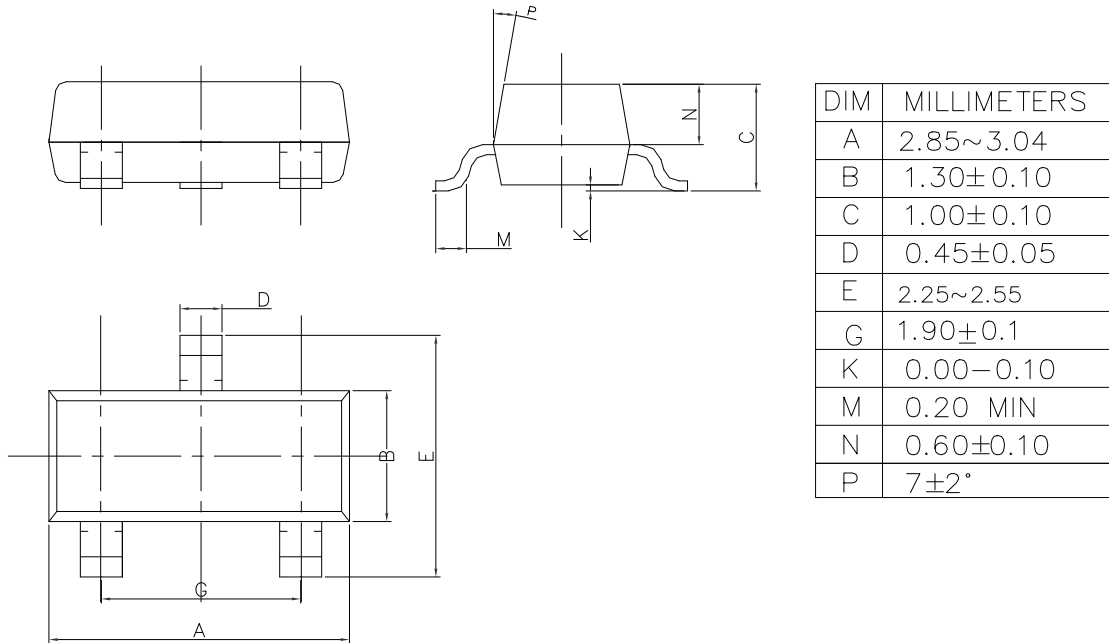
Typical Performance Characteristics



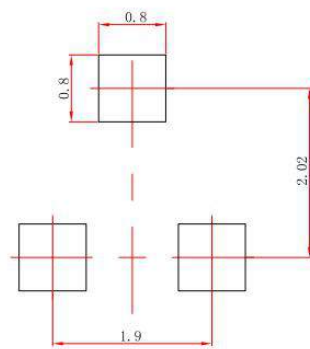
Typical Performance Characteristics



SOT-23 DIMENSION



SOT-23 Suggested Layout



Unit: mm±0.05mm