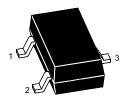


Features

- For Switching and Amplifier Applications.
- As Complementary Type of the PNP Transistor MMBT9012 is Recommended.





1.Base 2.Emitter 3.Collector

Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Collector Base Voltage	V _{CBO}	40	V
Collector Emitter Voltage	VCEO	30	V
Emitter Base Voltage	VEBO	5	V
Collector Current	lc	500	mA
Power Dissipation	PD	200	mW
Junction Temperature	TJ	150	°C
Storage Temperature Range	T _{STG}	-55 to 150	°C

Electrical Characteristics

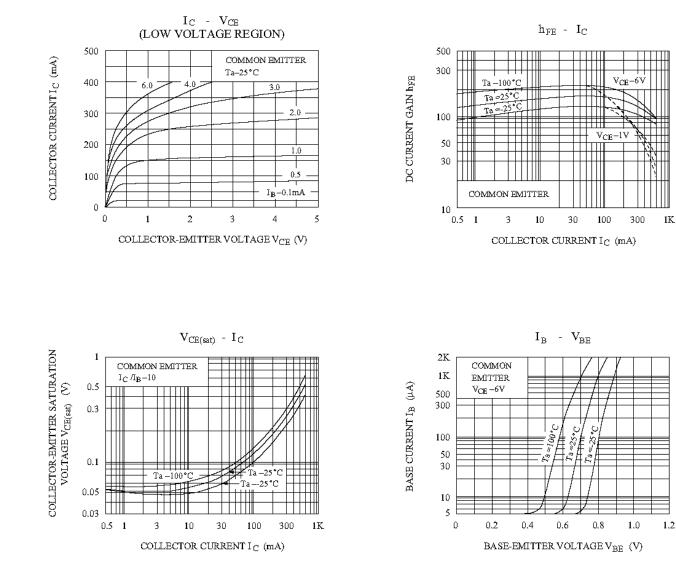
Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Min.	Тур.	Max.	Unit
DC Current Gain at V_{CE} = 1 V, Ic = 50 mA Current Gain Group G H at V_{CE} = 1 V, Ic = 500 mA	HFE	100 160 40	-	250 400 -	
Collector Base Cutoff Current at V_{CB} = 35 V	I _{CBO}	-	-	100	nA
Collector Base Cutoff Current at $V_{CB} = 5 V$	I _{EBO}	-	-	100	nA
Emitter Base Breakdown Voltage at Ic = 100 μA	V _{(BR)CBO}	40	-	-	V
Collector Emitter Breakdown Voltage at Ic = 1 mA	V _{(BR)CEO}	30	-	-	V
Emitter Base Breakdown Voltage at I⊧ = 100 µA	V _{(BR)EBO}	5	-	-	V
Collector Emitter Saturation Voltage at Ic = 500 mA, I _B = 50 mA	$V_{CE(sat)}$	-	-	0.6	V
Base Emitter Saturation Voltage at $I_C = 500$ mA, $I_B = 50$ mA	V _{BE(sat)}	-	-	1	V
Base Emitter Voltage at V _{CE} = 1 V, I _C = 100 mA	V _{BE}	-	-	1	V
Transition Frequency at Vce = 6 V, Ic = 20 mA	Fτ	-	100	-	MHz



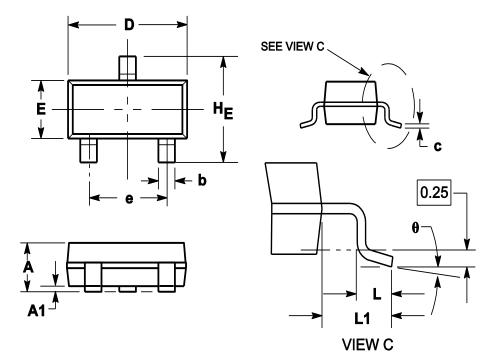
MMBT9013 NPN Transistor

Electrical Characteristics Curves





Package Outline(SOT-23)



Symbol	Dimensions in millimeter				
	Min.	Тур.	Max.		
А	0.900	1.025	1.150		
A1	0.000	0.050	0.100		
b	0.300	0.400	0.500		
С	0.080	0.115	0.150		
D	2.800	2.900	3.000		
E	1.200	1.300	1.400		
HE	2.250	2.400	2.550		
е	1.800	1.900	2.000		
L1	0.550REF				
L	0.300		0.500		
θ	0°		8°		

Device	Package	Reel Dimension (inch)	Shipping
MMBT9013	SOT-23	7	3,000

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