

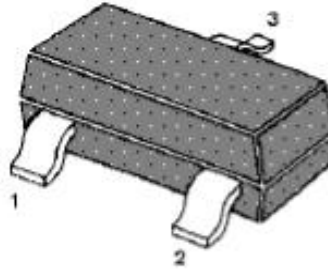
Kingtronics®

MMBT9013

NPN Silicon Epitaxial Planar Transistors

For switching and amplifier applications

As complementary types the PNP transistors MMBT9012 is recommended.



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

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

PARAMETER	SYMBOL	VALUE	UNIT
Collector Base Voltage	V_{CB0}	40	V
Collector Emitter Voltage	V_{CE0}	30	V
Emitter Base Voltage	V_{EB0}	5	V
Collector Current	I_c	500	mA
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Characteristics at $T_a = 25^\circ\text{C}$

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	
DC Current Gain					
at $V_{CE} = 1\text{ V}$, $I_c = 50\text{ mA}$	Current Gain Group G H	h_{FE}	100	250	-
at $V_{CE} = 1\text{ V}$, $I_c = 500\text{ mA}$			160	400	
Collector Base Cutoff Current					
at $V_{CB} = 35\text{ V}$	I_{CB0}	-	100	nA	
Emitter Base Cutoff Current					
at $V_{EB} = 5\text{ V}$	I_{EB0}	-	100	nA	
Collector Base Breakdown Voltage					
at $I_c = 100\text{ }\mu\text{A}$	$V_{(BR)CB0}$	40	-	V	
Collector Emitter Breakdown Voltage					
at $I_c = 1\text{ mA}$	$V_{(BR)CE0}$	30	-	V	
Emitter Base Breakdown Voltage					
at $I_E = 100\text{ }\mu\text{A}$	$V_{(BR)EB0}$	5	-	V	
Collector Emitter Saturation Voltage					
at $I_c = 500\text{ mA}$, $I_B = 50\text{ mA}$	$V_{CE(sat)}$	-	0.6	V	
Base Emitter Saturation Voltage					
at $I_c = 500\text{ mA}$, $I_B = 50\text{ mA}$	$V_{BE(sat)}$	-	1.2	V	
Base Emitter Voltage					
at $V_{CE} = 1\text{ V}$, $I_c = 100\text{ mA}$	V_{BE}	-	1	V	
Gain Bandwidth Product					
at $V_{CE} = 6\text{ V}$, $I_c = 20\text{ mA}$	f_T	100	-	MHz	

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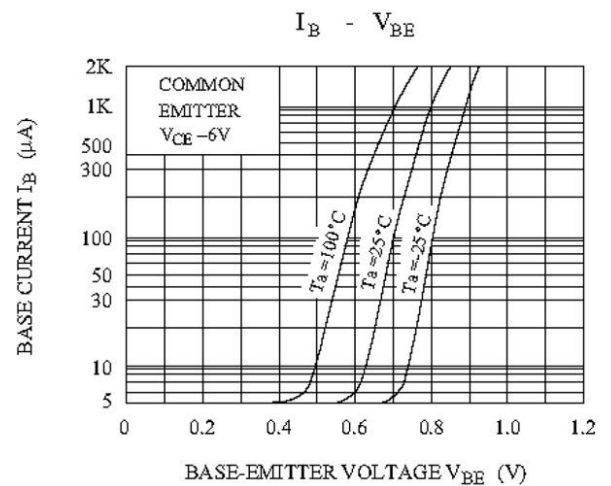
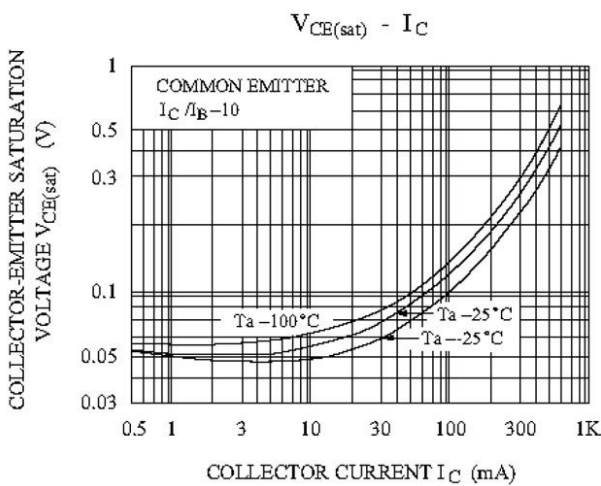
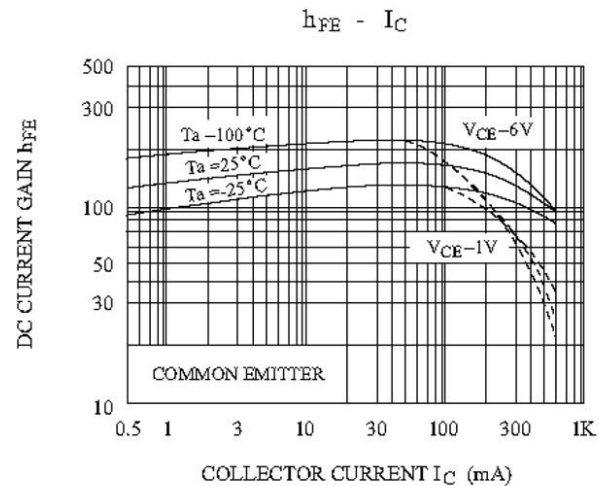
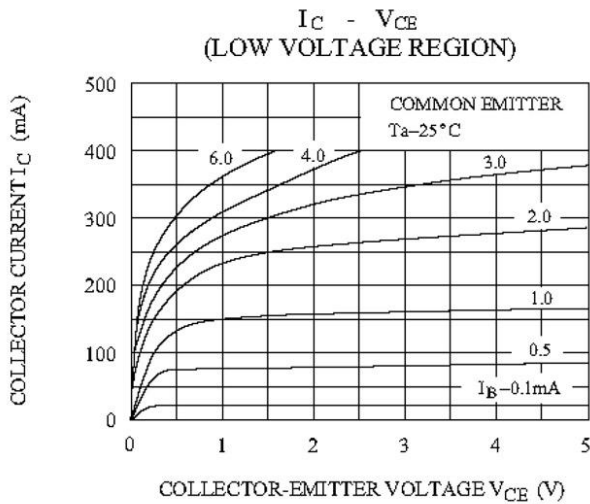
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RATINGS AND CHARACTERISTIC CURVES MMBT9013



Note: Specifications are subject to change without notice.

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