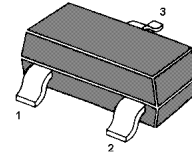


# MMBTSC2413

## NPN Silicon Epitaxial Planar Transistor

High frequency amplifier transistor.



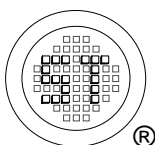
1. Base 2. Emitter 3. Collector  
SOT-23 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	40	V
Collector Emitter Voltage	$V_{CEO}$	25	V
Emitter Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	50	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 $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE} = 6\text{ V}$ , $I_C = 1\text{ mA}$	$h_{FE}$	82	-	180	-
Collector Base Cutoff Current at $V_{CB} = 24\text{ V}$	$I_{CBO}$	-	-	0.5	$\mu\text{A}$
Emitter Base Cutoff Current at $V_{EB} = 3\text{ V}$	$I_{EBO}$	-	-	0.5	$\mu\text{A}$
Collector Base Breakdown Voltage at $I_C = 50\text{ }\mu\text{A}$	$V_{(BR)CBO}$	40	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	25	-	-	V
Emitter Base Breakdown Voltage at $I_E = 50\text{ }\mu\text{A}$	$V_{(BR)EBO}$	5	-	-	V
Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$ , $I_B = 1\text{ mA}$	$V_{CE(sat)}$	-	-	0.3	V
Gain Bandwidth Product at $V_{CE} = 6\text{ V}$ , $-I_E = 1\text{ mA}$ , $f = 100\text{ MHz}$	$f_T$	100	300	-	MHz
Output Capacitance at $V_{CB} = 6\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	1.3	2.2	pF

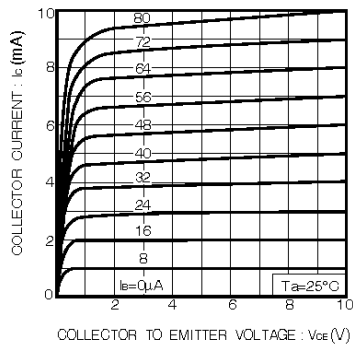


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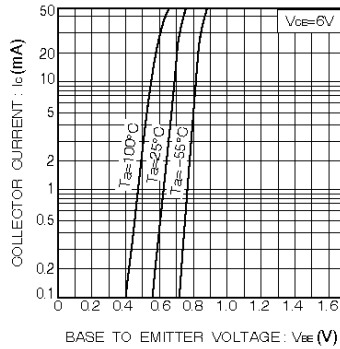


Dated : 17/04/2009

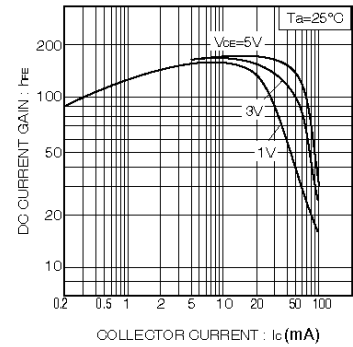
# MMBTSC2413



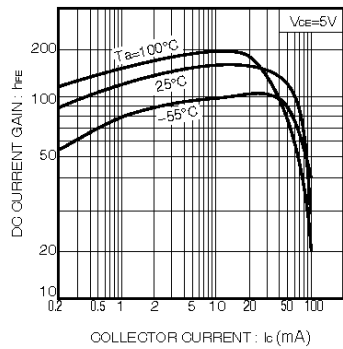
Ground emitter output characteristics



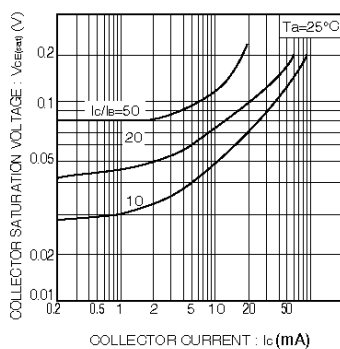
Ground emitter propagation characteristics



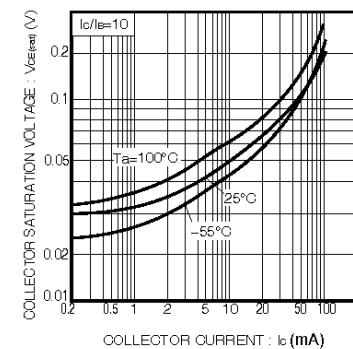
DC current gain vs. collector current ( I )



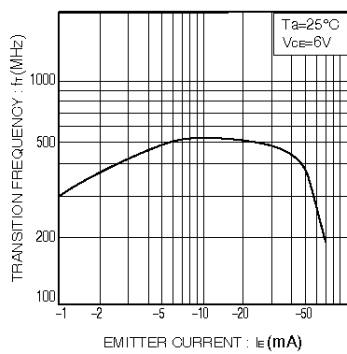
DC current gain vs. collector current ( II )



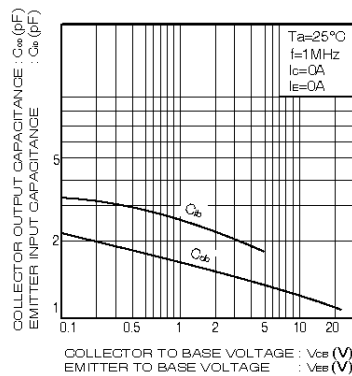
Collector-emitter saturation voltage vs. collector current ( I )



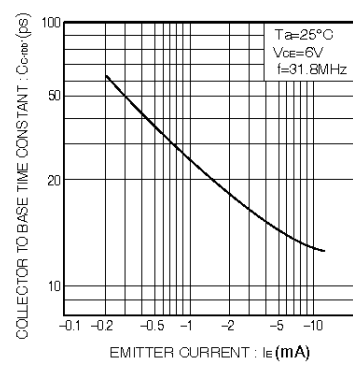
Collector-emitter saturation voltage vs. collector current ( II )



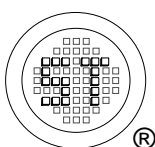
Gain bandwidth product vs. emitter current



Capacitance vs. voltage



Collector to base time constant vs. emitter current



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