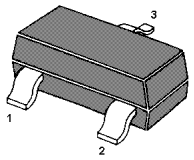
MMBTSC2714

NPN Silicon Epitaxial Planar Transistor

for high frequency amplifier at FM,RF,MIX, and IF amplifier applications.

The transistor is subdivided into three groups, R, O and Y, according to its DC current gain.



1. Base 2. Emitter 3. Collector

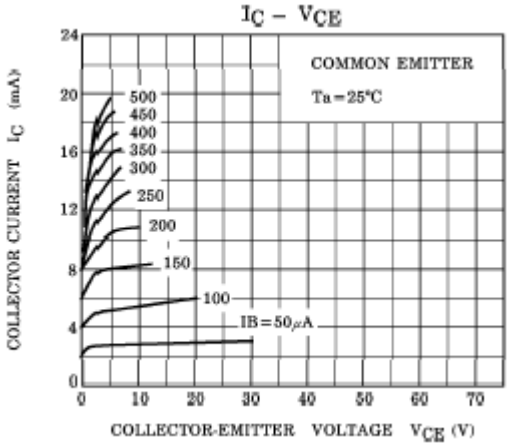
SOT-23 Plastic Package

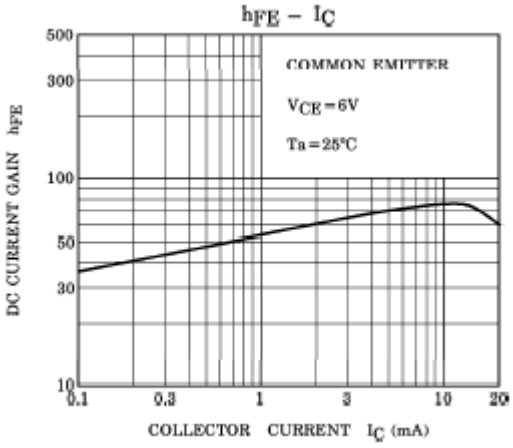
Absolute Maximum Ratings (T_a = 25 °C)

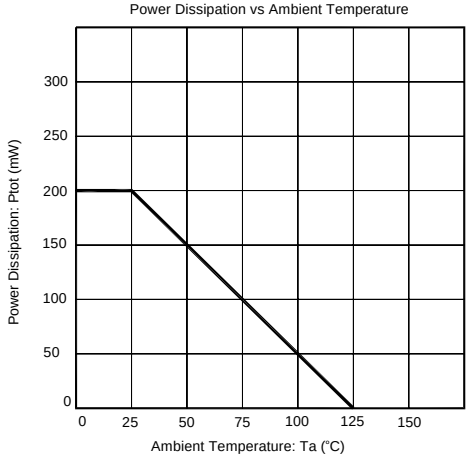
Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	40	V
Collector Emitter Voltage	V_{CEO}	30	V
Emitter Base Voltage	V_{EBO}	4	V
Collector Current	I_C	20	mA
Base Current	I_B	4	mA
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	- 55 to + 125	°C

Characteristics at T_{amb}=25 °C

Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_{CE} = 6 V, I_C = 1 mA Current Gain Group	R	h_{FE}	40	-	80	-
	O	h_{FE}	70	-	140	-
	Y	h_{FE}	100	-	200	-
Collector Base Cutoff Current at V_{CB} = 18 V		I_{CBO}	-	-	500	nA
Emitter Base Cutoff Current at V_{EB} = 4 V		I_{EBO}	-	-	500	nA
Collector Base Breakdown Voltage at I_C = 100 µA		$V_{(BR)CBO}$	40	-	-	V
Collector Emitter Breakdown Voltage at I_C = 1 mA		$V_{(BR)CEO}$	30	-	-	V
Emitter Base Breakdown Voltage at I_E = 100 µA		$V_{(BR)EBO}$	4	-	-	V
Collector Emitter Saturation Voltage at I_C = 10 mA, I_B = 1 mA		$V_{CE(sat)}$	-	-	0.5	V
Transition Frequency at V_{CE} = 6 V, I_C = 1 mA		f_T	-	550	-	MHz
Reverse Transfer Capacitance at V_{CB} = 6 V, f = 1 MHz		C_{re}	-	0.7	-	pF


$I_C - V_{CE}$
COMMON EMITTER
Ta = 25°C
500
450
400
350
300
250
200
150
100
IB = 50μA
COLLECTOR CURRENT I_C (mA)
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)
0
4
8
12
16
20
24
0
10
20
30
40
50
60
70


$h_{FE} - I_C$
COMMON EMITTER
V_{CE} = 6V
Ta = 25°C
DC CURRENT GAIN h_{FE}
COLLECTOR CURRENT I_C (mA)
10
30
50
100
300
500
0.1
0.3
1
3
10
20


Power Dissipation vs Ambient Temperature
Power Dissipation: Ptot (mW)
Ambient Temperature: Ta (°C)
0
50
100
150
200
250
300
0
25
50
75
100
125
150