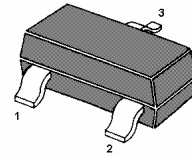


# MMBTSC3928

## NPN Silicon Epitaxial Planar Transistor

for low frequency amplification applications

The transistor is subdivided into four groups Q, R, S and T, according to its DC current gain.



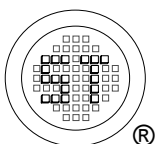
1. Base 2. Emitter 3. Collector  
SOT-23 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CB0}$	50	V
Collector Emitter Voltage	$V_{CEO}$	50	V
Emitter Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	200	mA
Power Dissipation	$P_{tot}$	200	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_s$	- 55 to + 150	$^\circ\text{C}$

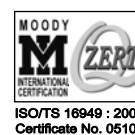
### Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 6\text{ V}$ , $I_C = 1\text{ mA}$ Current Gain Group at $V_{CE} = 6\text{ V}$ , $I_C = 0.1\text{ mA}$	Q	$h_{FE}$	120	-	270	-
	R	$h_{FE}$	180	-	390	-
	S	$h_{FE}$	270	-	560	-
	T	$h_{FE}$	390	-	820	-
		$h_{FE}$	70	-	-	-
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CB0}$	50	-	-	V	
Collector Emitter Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CEO}$	50	-	-	V	
Emitter Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)EBO}$	6	-	-	V	
Collector Cutoff Current at $V_{CB} = 50\text{ V}$	$I_{CB0}$	-	-	0.1	$\mu\text{A}$	
Emitter Cutoff Current at $V_{EB} = 4\text{ V}$	$I_{EBO}$	-	-	0.1	$\mu\text{A}$	
Collector Emitter Saturation Voltage at $I_C = 100\text{ mA}$ , $I_B = 10\text{ mA}$	$V_{CE(sat)}$	-	-	0.3	V	
Gain Bandwidth Product at $V_{CE} = 6\text{ V}$ , $-I_E = 10\text{ mA}$	$f_T$	-	200	-	MHz	
Collector Output Capacitance at $V_{CB} = 6\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	4	-	pF	
Noise Figure at $V_{CE} = 6\text{ V}$ , $-I_E = 0.1\text{ mA}$ , $f = 1\text{ KHz}$ , $R_G = 2\text{ K}\Omega$	NF	-	-	15	dB	

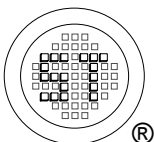
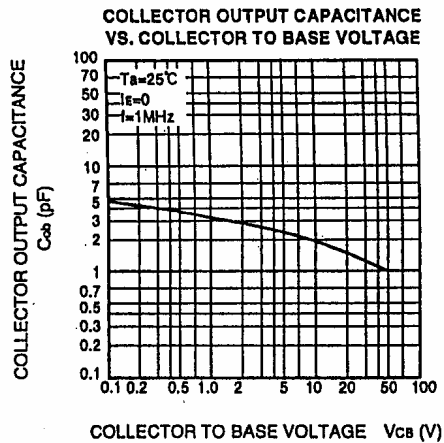
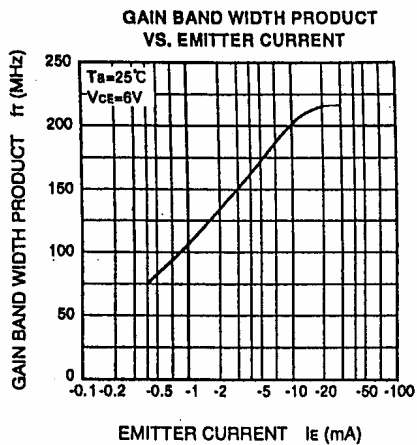
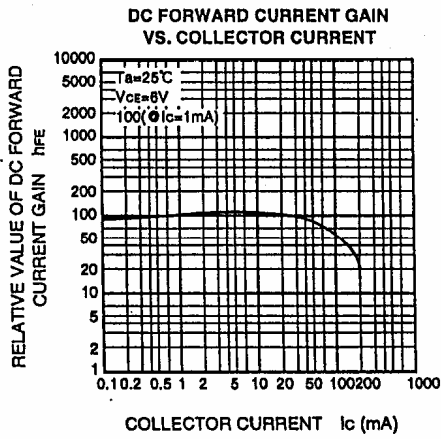
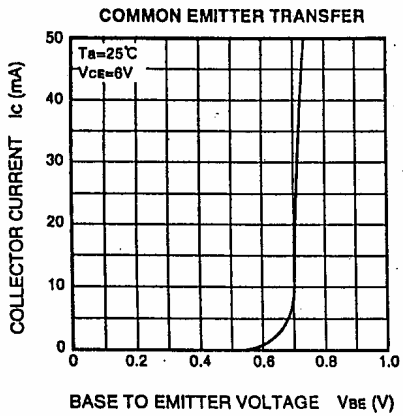
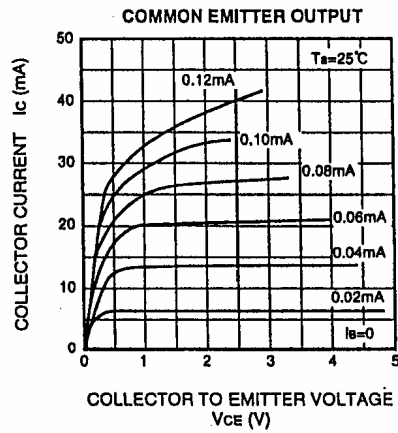
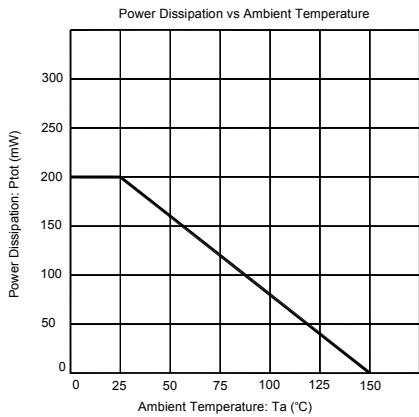


**SEMTECH ELECTRONICS LTD.**

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Certificate No. 05103



ISO 14001:2004  
Certificate No. 71116



ISO 9001:2000  
Certificate No. 0506098