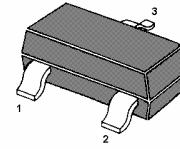


# MMBTSC3928

## 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.



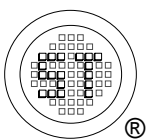
1. Base 2. Emitter 3. Collector  
SOT-23 Plastic Package

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

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

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

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



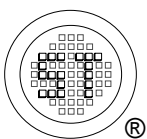
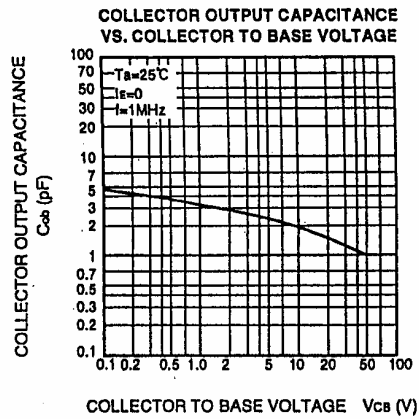
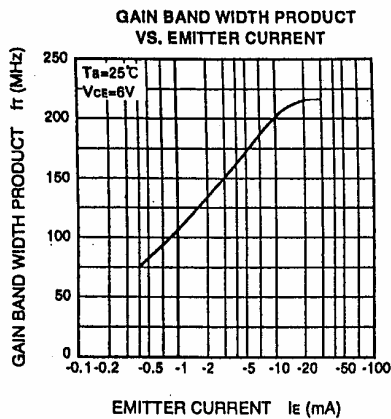
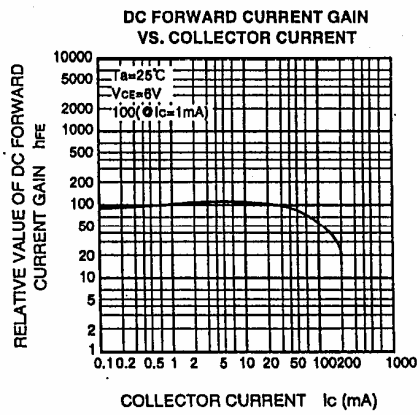
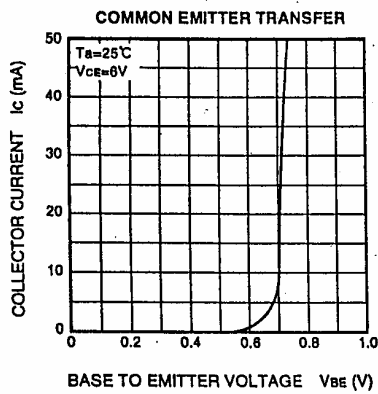
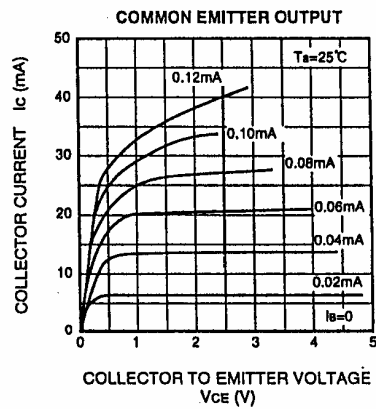
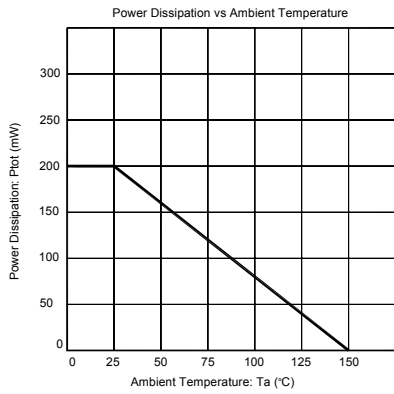
**SEMTECH ELECTRONICS LTD.**

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



Dated : 05/08/2006

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ISO/TS 16949 : 2002  
Certificate No. 05103



ISO 14001:2004  
Certificate No. 7116



ISO 9001:2000  
Certificate No. 0508098

Dated : 05/08/2006