



MEI SEMI INC.

SOT-23 Plastic-Encapsulate Transistors**MMBTA28** TRANSISTOR (NPN)**SOT-23**

1. BASE
2. EMITTER
3. COLLECTOR

**FEATURES**

Darlington transistor

MARKING: 3SS

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	80	V
V_{CES}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	12	V
I_C	Collector Current -Continuous	800	mA
P_C	Collector power dissipation	350	mW
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150	$^{\circ}\text{C}$
$R_{\theta JA}$	Thermal Resistance, junction to Ambient	200	$^{\circ}\text{C}/\text{mW}$
$R_{\theta JC}$	Thermal Resistance, junction to Case	83.3	$^{\circ}\text{C}/\text{mW}$

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

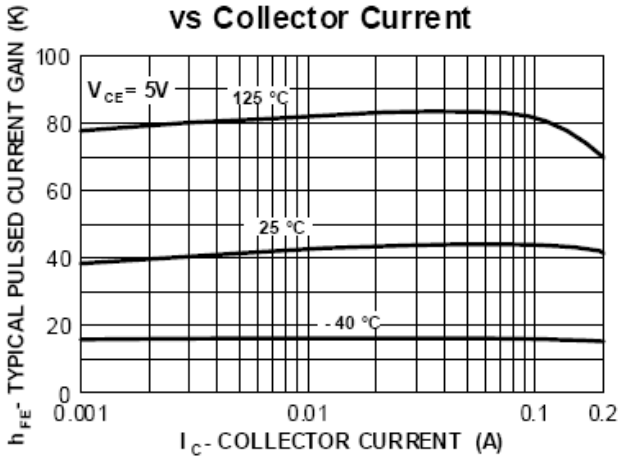
Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	80		V
Collector-emitter breakdown voltage	$V_{(BR)CES}$	$I_C=100\mu\text{A}, I_B=0$	80		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	12		V
Collector cut-off current	I_{CBO}	$V_{CB}=60\text{V}, I_E=0$		0.1	μA
Collector cut-off current	I_{CES}	$V_{CB}=60\text{V}, V_{BE}=0$		0.5	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=10\text{V}, I_C=0$		0.1	μA
DC current gain	$h_{FE(1)}^*$	$V_{CE}=5\text{V}, I_C=10\text{mA}$	10K		
	$h_{FE(2)}^*$	$V_{CE}=5\text{V}, I_C=100\text{mA}$	10K		
Collector-emitter saturation voltage	$V_{CE(sat)1}^*$	$I_C=10\text{mA}, I_B=0.01\text{mA}$		1.2	V
	$V_{CE(sat)2}^*$	$I_C=100\text{mA}, I_B=0.1\text{mA}$		1.5	V
Base-emitter voltage	$V_{BE(on)}^*$	$V_{CE}=5\text{V}, I_C=100\text{mA}$		2.0	V
Transition frequency	f_T	$V_{CE}=5\text{V}, I_C=10\text{mA}$ $f=100\text{MHz}$	125		MHz
Output capacitance	C_{obo}	$V_{CB}=1\text{V}, I_E=0, f=1\text{MHz}$		8	pF

* pulse test.

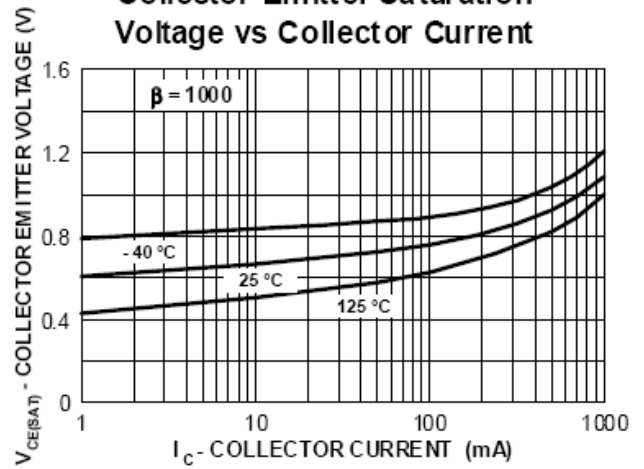
Typical Characteristics

MMBTA28

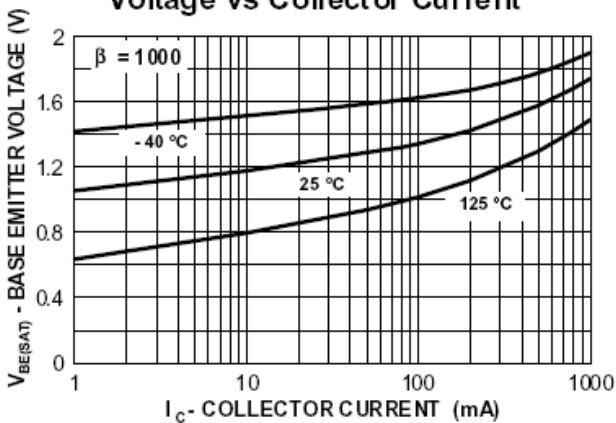
Typical Pulsed Current Gain vs Collector Current



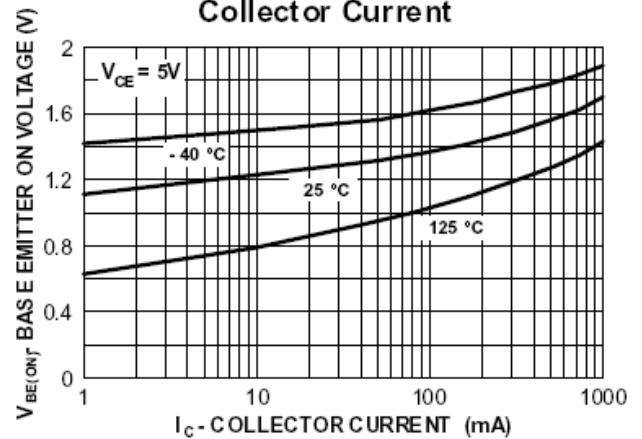
Collector-Emitter Saturation Voltage vs Collector Current



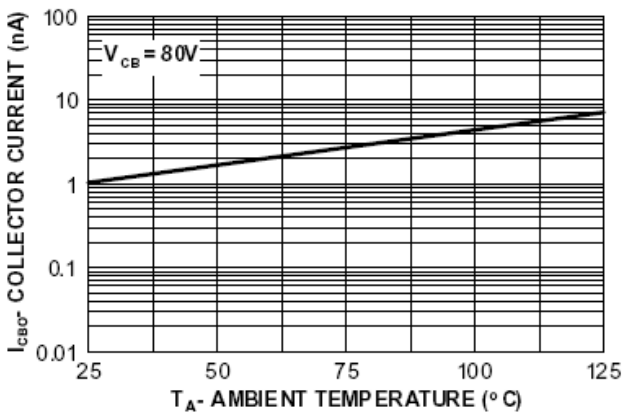
Base-Emitter Saturation Voltage vs Collector Current



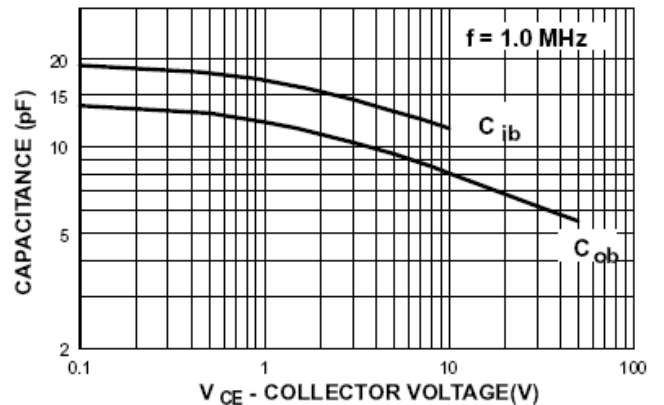
Base Emitter ON Voltage vs Collector Current



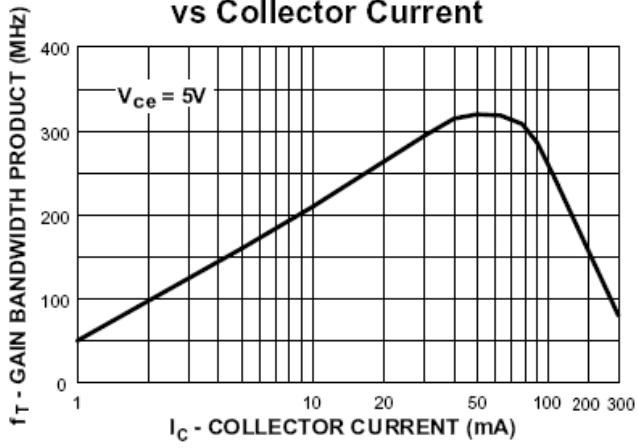
Collector-Cutoff Current vs Ambient Temperature



Input and Output Capacitance vs Reverse Voltage



Gain Bandwidth Product vs Collector Current



Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base

