

Medium Power Transistor (−32V, −1A)

MP6T1

●Applications

Low frequency amplifier

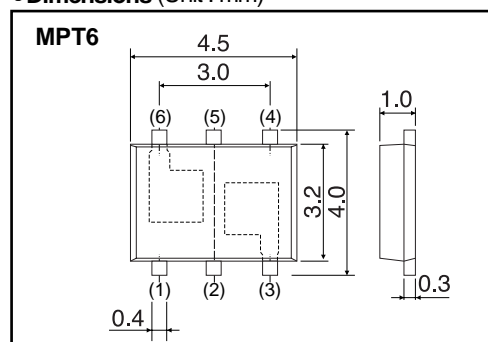
●Features

- 1) Low $V_{CE(sat)}$, $V_{CE(sat)} = 0.2V(Typ.)$
($I_C/I_B = -500mA / -50mA$)
- 2) Contain two 2SB1132-dies in a package.

●Structure

PNP silicon epitaxial planar transistor

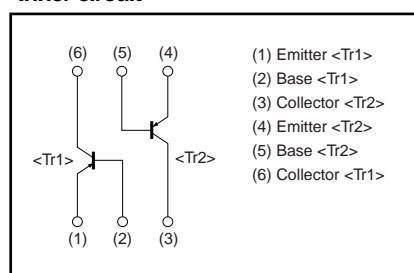
●Dimensions (Unit : mm)



●Packaging specifications

Type	Package	Taping
	Code	TR
	Basic ordering unit(pieces)	1000
MP6T1		○

●Inner circuit



●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	−40	V
Collector-emitter voltage		V_{CEO}	−32	V
Emitter-base voltage		V_{EBO}	−5	V
Collector current	Continuous	I_C	−1	A
	Pulsed	$I_{CP} *1$	−2	A
Power dissipation		$P_D *2$	2.0	W / TOTAL
			1.4	W / ELEMENT
Junction temperature		T_J	150	°C
Range of storage temperature		T_{stg}	−55 to +150	°C

*1 $P_w=10ms$ 1 Pulse

*2 Mounted on a ceramic board

Transistors

●Electrical characteristics (Ta=25°C)
<Tr1, Tr2>

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-Emitter breakdown voltage	BV_{CEO}	-32	-	-	V	$I_C = -1\text{mA}$
Collector-base breakdown voltage	BV_{CBO}	-40	-	-	V	$I_C = -50\mu\text{A}$
Emitter-base breakdown voltage	BV_{EBO}	-5	-	-	V	$I_E = -50\mu\text{A}$
Collector cut off current	I_{CBO}	-	-	-500	nA	$V_{CB} = -20\text{V}$
Emitter cut off current	I_{EBO}	-	-	-500	nA	$V_{EB} = -4\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	-	-	-500	mV	$I_C/I_B = -500\text{mA}/-50\text{mA}$
DC current gain	h_{FE}	120	-	390	-	$V_{CE} = -3\text{V}$, $I_C = -100\text{mA}$
Transition frequency	f_T	-	150	-	MHz	$V_{CE} = -5\text{V}$, $I_E = 50\text{mA}$, $f = 100\text{MHz}$
Collector output capacitance	C_{ob}	-	20	-	pF	$V_{CB} = -10\text{V}$, $I_E = 0\text{A}$, $f = 1\text{MHz}$

* Pulsed

●Electrical characteristics curves

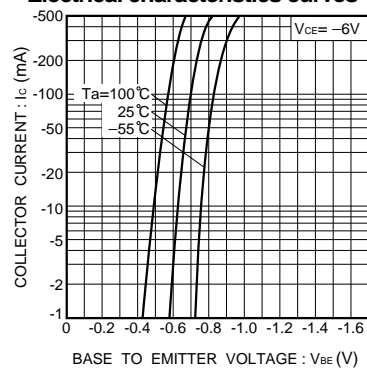


Fig.1 Grounded Emitter Propagation Characteristics

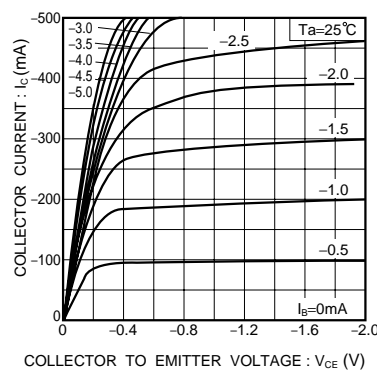


Fig.2 Grounded Emitter Output Characteristics

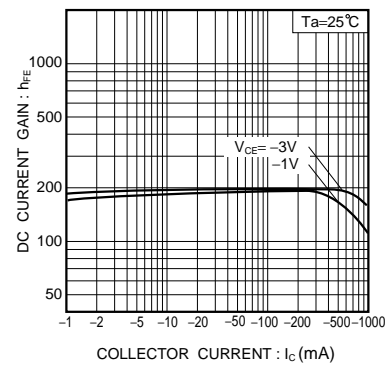


Fig.3 DC Current Gain vs. Collector Current (I)

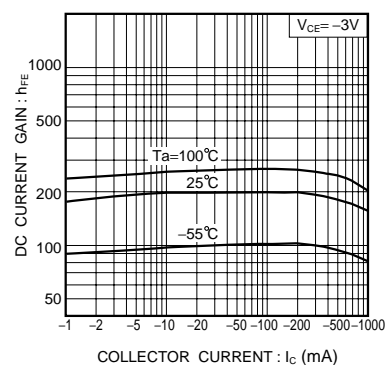


Fig.4 DC Current Gain vs. Collector Current (II)

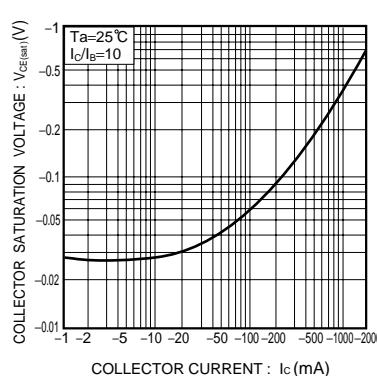


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current

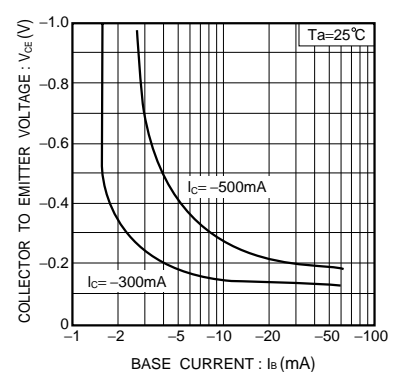


Fig.6 Collector-Emitter Saturation Voltage vs. Base Current

Transistors

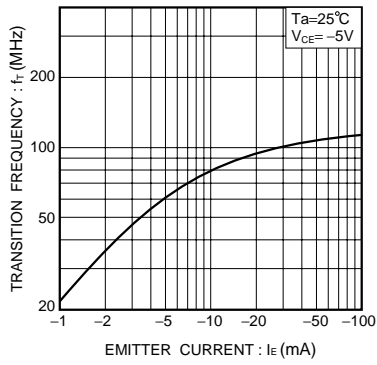


Fig.7 Gain Bandwidth Product vs. Emitter Current

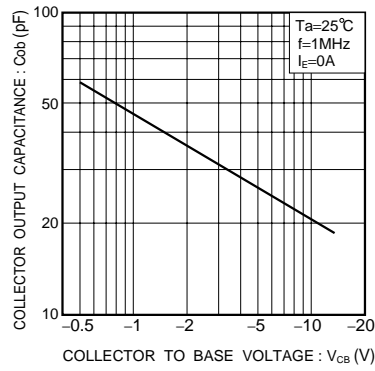


Fig.8 Collector output capacitance vs. collector-base voltage

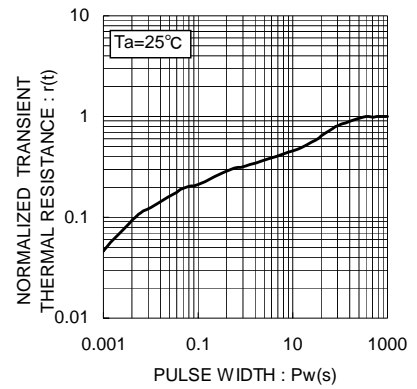


Fig.9 Normalized Thermal Resistance (Element)

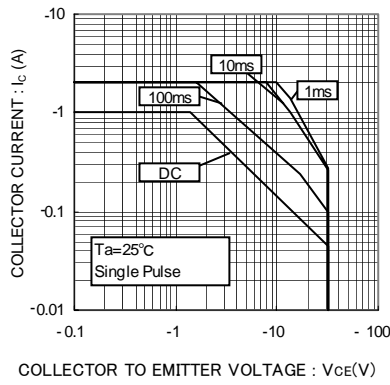


Fig.10 Safe Operating Area (Tr 1 & Tr 2)

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