Medium Power Transistor (32V, 2A)

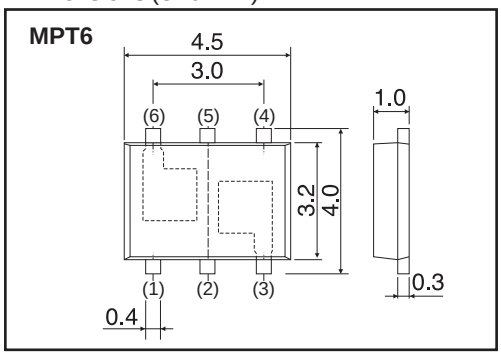
MP6Z2

●**Applications**
Low frequency amplifier

●**Features**
1) Low $V_{CE(sat)}$
$V_{CE(sat)}$ = 0.5V(Typ.)
(I_C / I_B = 2A / 0.2A)
2) Contains 2SD1766-die and 2SB1188-die in a package.

●**Structure**
Silicon epitaxial planar transistor

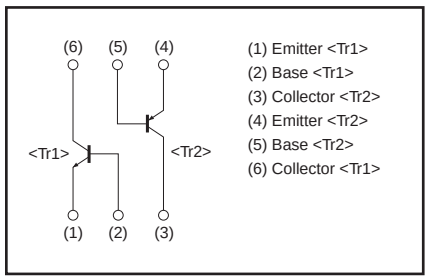
●**Dimensions** (Unit : mm)



●**Packaging specifications**

Type	Package	Taping
	Code	TR
	Basic ordering unit(pieces)	1000
MP6Z2		○

●**Inner circuit**



●**Absolute maximum ratings** (Ta=25°C)

Parameter		Symbol	Limits		Unit
			Tr1	Tr2	
Collector-base voltage		V_{CBO}	40	–40	V
Collector-emitter voltage		V_{CEO}	32	–32	V
Emitter-base voltage		V_{EBO}	5	–5	V
Collector current	Continuous	I_C	2.0	–2.0	A
	Pulsed	I_{CP} *1	2.5	–2.5	A
Power dissipation		P_D *2	2.0		W / TOTAL
			1.4		W / ELEMENT
Junction temperature		T_j	150		°C
Range of storage temperature		Tstg	–55 to 150		°C

*1 Pw=10ms 1Pulse
*2 Mounted on a ceramic board

●**Electrical characteristics** (Ta=25°C)

<Tr1>

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CEO}	32	–	–	V	I_C=1mA
Collector-base breakdown voltage	BV_{CBO}	40	–	–	V	I_C=50μA
Emitter-base breakdown voltage	BV_{EBO}	5	–	–	V	I_E=50μA
Collector cut-off current	I_{CBO}	–	–	1.0	μA	V_{CB}=20V
Emitter cut-off current	I_{EBO}	–	–	1.0	μA	V_{EB}=4V
Collector-emitter saturation voltage	$V_{CE(sat)}$*	–	500	800	mV	I_C=2A, I_B=200mA
DC current gain	h_{FE}	120	–	390	–	V_{CE}=3V, I_C=500mA
Transition frequency	f_T *	–	100	–	MHz	V_{CE}=5V, I_E=–50mA, f=100MHz
Collector output capacitance	Cob	–	30	–	pF	V_{CB}=10V, I_E=0A, f=1MHz

* Pulsed

<Tr2>

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CEO}	–32	–	–	V	I_C= –1mA
Collector-base breakdown voltage	BV_{CBO}	–40	–	–	V	I_C= –50μA
Emitter-base breakdown voltage	BV_{EBO}	–5	–	–	V	I_E= –50μA
Collector cut-off current	I_{CBO}	–	–	–1.0	μA	V_{CB}= –20V
Emitter cut-off current	I_{EBO}	–	–	–1.0	μA	V_{EB}= –4V
Collector-emitter saturation voltage	$V_{CE(sat)}$*	–	–500	–800	mV	I_C= –2A, I_B= –200mA
DC current gain	h_{FE}	120	–	390	–	V_{CE}= –3V, I_C= –500mA
Transition frequency	f_T *	–	100	–	MHz	V_{CE}= –5V, I_E=50mA, f=100MHz
Collector output capacitance	Cob	–	50	–	pF	V_{CB}= –10V, I_E=0A, f=1MHz

* Pulsed

●Electrical characteristics curves

<Tr1>

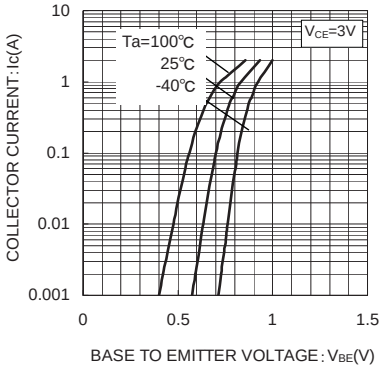


Fig.1 Grounded Emitter Propagation Characteristics

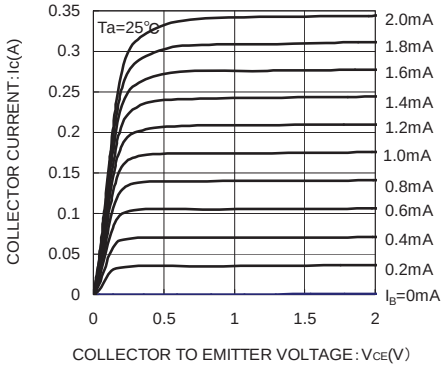


Fig.2 Ground Emitter Output Caracteristics

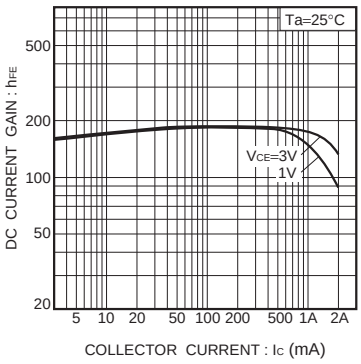


Fig.3 DC Current Gain vs. Collector Current (Ⅰ)

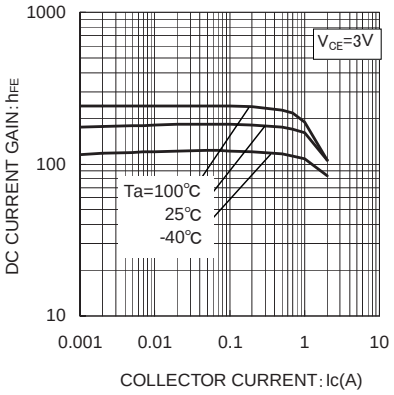


Fig.4 DC Current Gain vs. Collector Current (Ⅱ)

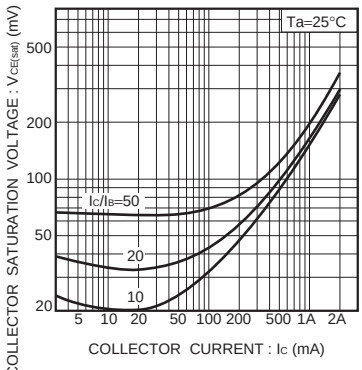


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (Ⅰ)

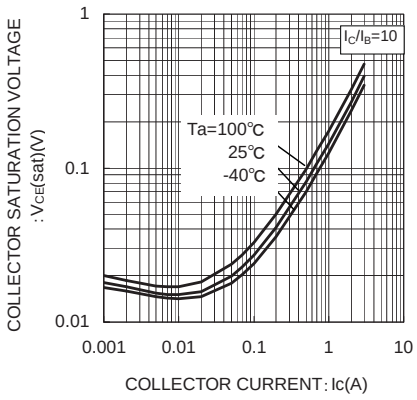


Fig.6 Collector-Enitter Saturation Voltage vs. Collector Current (Ⅱ)

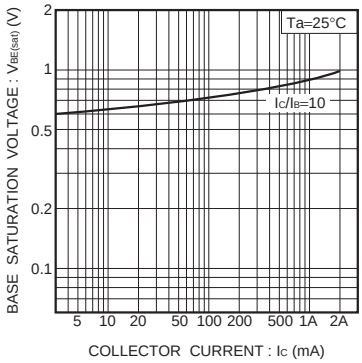


Fig.7 Collector-Emitter Saturation Voltage vs. Collector Current

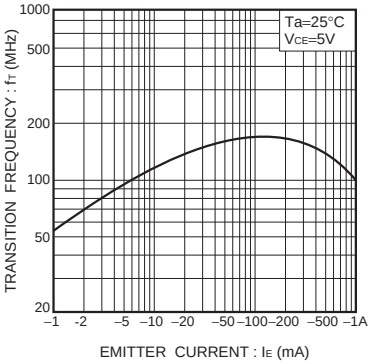


Fig.8 Transition Frequency vs. Emitter Current

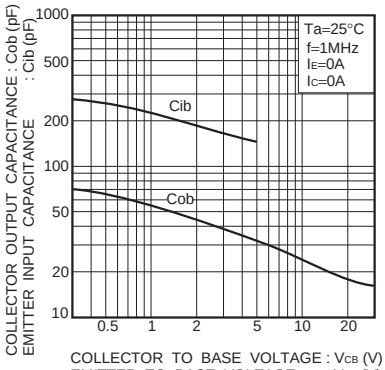


Fig.9 Collector Output Capacitance vs. Collector-Base Voltage
Emitter Input Capacitance vs. Emitter-Base Voltage

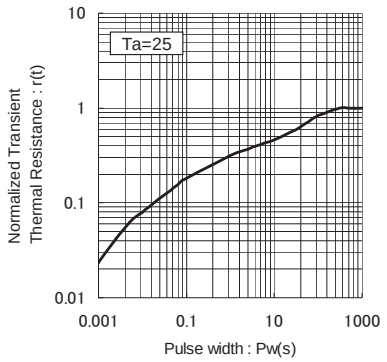


Fig.10 Normalized Thermal Resistance (Element)

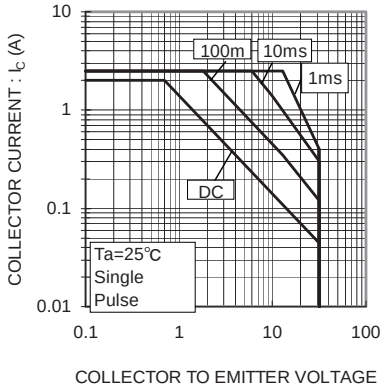


Fig.11 Safe Operating Area

●電気的特性曲線

<Tr2>

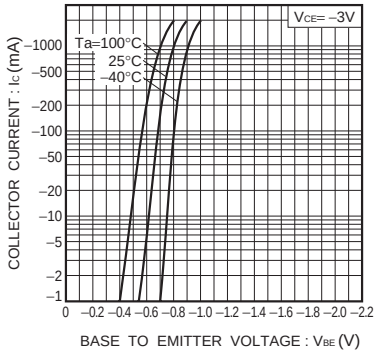


Fig.1 Grounded Emitter Propagation Characteristics

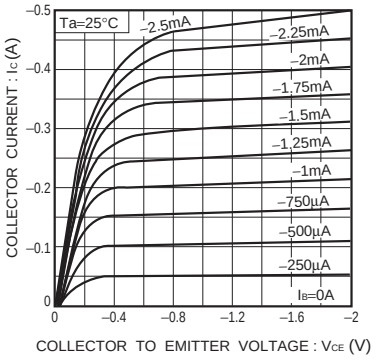


Fig.2 Grounded Emitter Output Characteristics

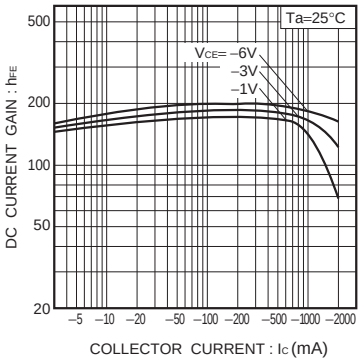


Fig.3 DC Current Gain vs. Collector Curren (I)

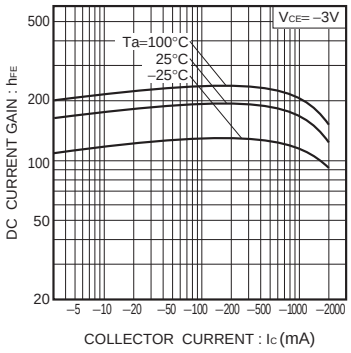


Fig.4 DC Current Gain vs. Collector Current (II)

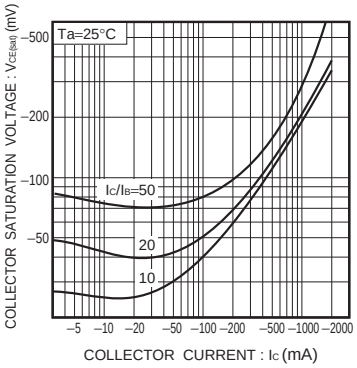


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Vurrent (I)

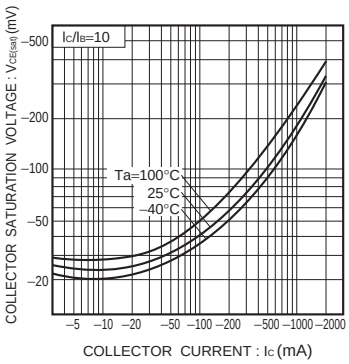


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

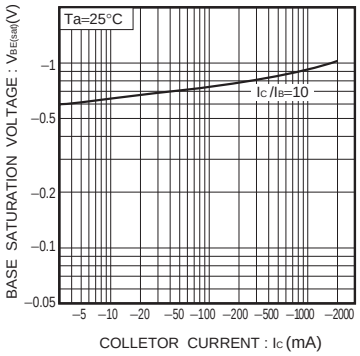


Fig.7 Base-Emitter Saturation Voltage vs. Collector current

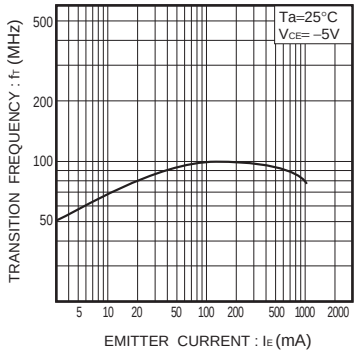


Fig.8 Gain Bandwidth Product vs. Emitter Current

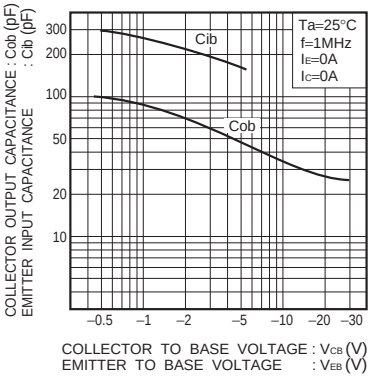
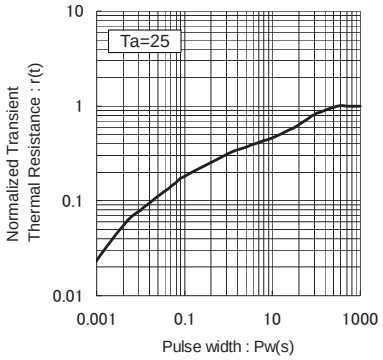


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage



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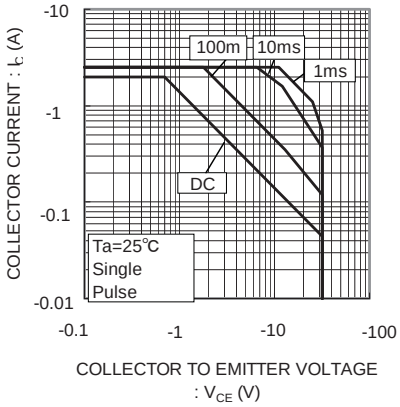

Fig.11 Safe Operating Area

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