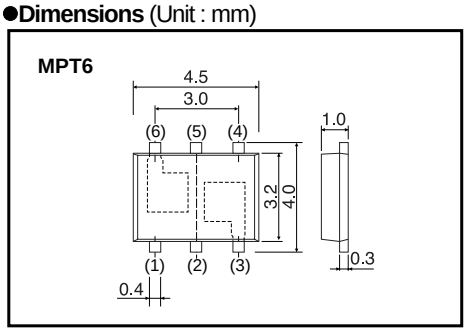
General purpose (Dual digital transistors)

MP6H1

●**Features**

1) High h_{FE}.
   h_{FE}=300(Min.)(V_{CE}/ I_C=2V/500mA)
2) Low saturation voltage.
   V_{CE}(sat)=400mV(Max.) (I_C/I_B=500mA/5mA)
3) Built in Zener diode for protection against surges when connected to inductive load.

●**Dimensions** (Unit : mm)



●**Structure**

NPN silicon epitaxial planar transistor
(Resistor built-in type)

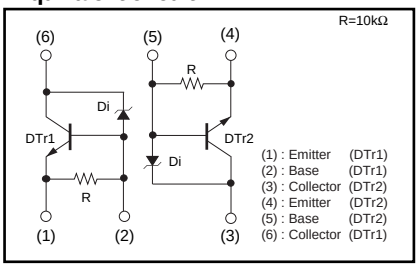
●**Applications**

Driver

●**Packaging specifications and h_{FE}**

Type	Package	MPT6
	Packaging style	Taping
	Code	TR
	Basic ordering unit(pieces)	1000
MP6H1		○

●**Equivalent circuit**



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

《DTR1》《DTR2》

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	60±10	V
Collector-emitter voltage		V_{CEO}	60±10	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	℃
Storage temperature		Tstg	-55 to +150	℃

*1 Pw=10ms, Single pulse

*2 Each terminal mounted on a ceramic board

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

《DTR1》《DTR2》

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-emitter breakdown voltage	BV_{CEO}	50	-	70	V	I_C=1mA
Collector-base breakdown voltage	BV_{CBO}	50	-	70	V	I_C=50μA
Emitter-base breakdown voltage	BV_{EBO}	5	-	-	V	I_E=720μA
Collector cutoff current	I_{CBO}	-	-	500	nA	V_{CB}=40V
Emitter cutoff current	I_{EBO}	300	-	580	μA	V_{EB}=4V
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	400	mV	I_C/I_B=500mA/5mA
DC current gain	h_{FE}	300	-	-	-	V_{CE}=2V,I_C=500mA
Emitter-base resistance	R	7	10	13	kΩ	
Transition frequency	f_{T*}	-	80	-	MHz	V_{CE}=5V,I_E=-100mA,f=30MHz

∗ Characteristics of built-in transistor.

●**Electrical characteristic curves**

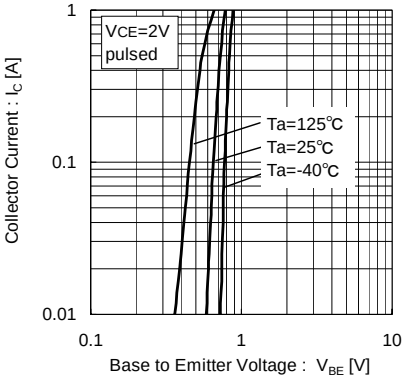


Fig.1 Grounded Emitter Propagation Characteristics

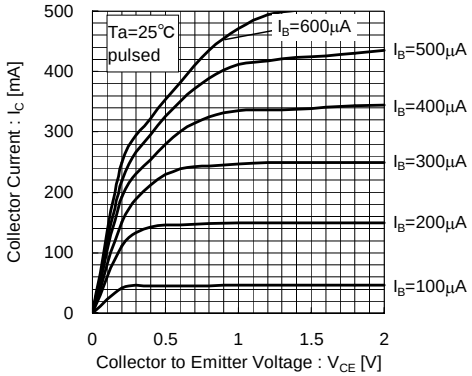


Fig.2 Typical Output Characteristics

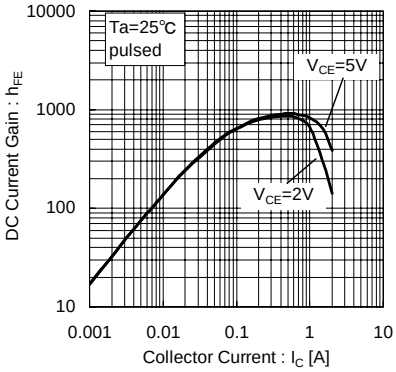


Fig.3 DC Current Gain vs Collector Current Ⅰ

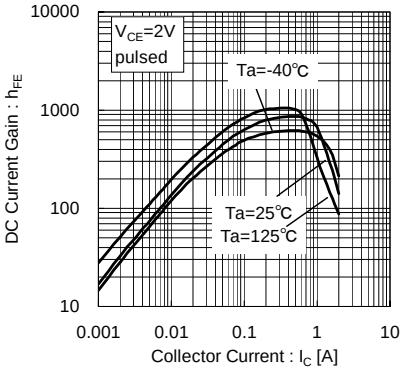


Fig.4 DC Current Gain vs Collector Current Ⅱ

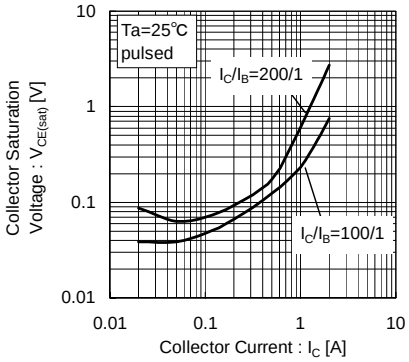


Fig.5 Collector-Emitter Saturation Voltage vs Collector Current Ⅰ

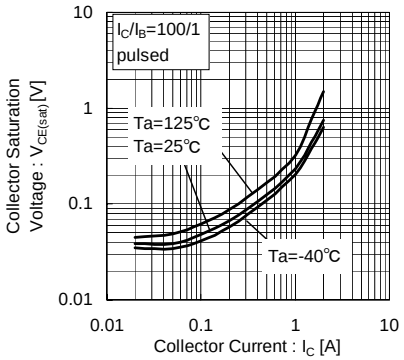


Fig.6 Collector-Emitter Saturation Voltage vs Collector Current Ⅱ

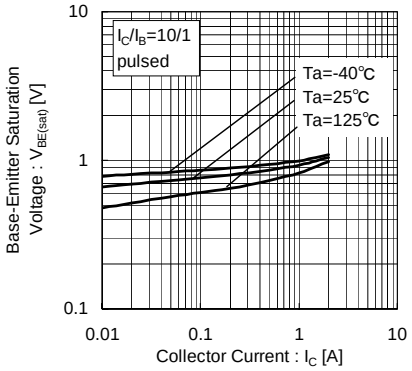


Fig.7 Base-Emitter Saturation Voltage vs Collector Current

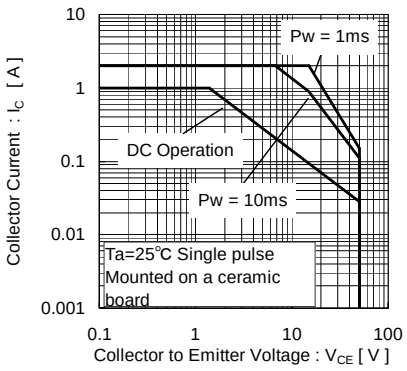


Fig.8 Maximum Safe Operating Area

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