

2SD1705

Silicon NPN Epitaxial Planar Type

Power Switching
Complementary Pair with 2SB1154

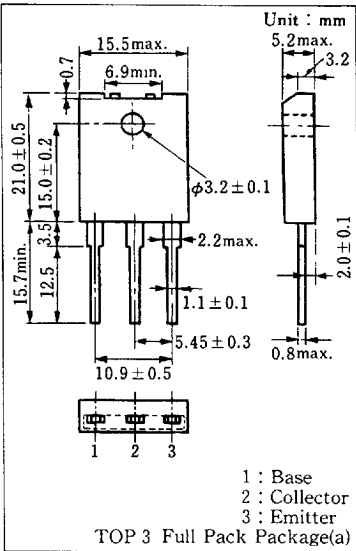
Features

- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- Good linearity of DC current gain (h_{FE})
- High collector current (I_C)
- "Full Pack" package for simplified mounting on a heat sink with one screw

Absolute Maximum Ratings ($T_c=25^{\circ}C$)

Item	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	130	V
Collector-emitter voltage	V_{CEO}	80	V
Emitter-base voltage	V_{EB0}	7	V
Peak collector current	I_{CP}	20	A
Collector current	I_C	10	A
Collector power dissipation	$T_c=25^{\circ}C$	70	W
	$T_a=25^{\circ}C$	3	
Junction temperature	T_j	150	$^{\circ}C$
Storage temperature	T_{sig}	$-55 \sim +150$	$^{\circ}C$

Package Dimensions



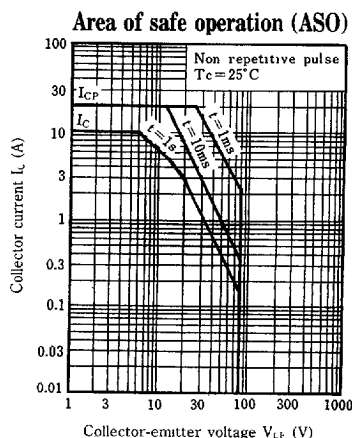
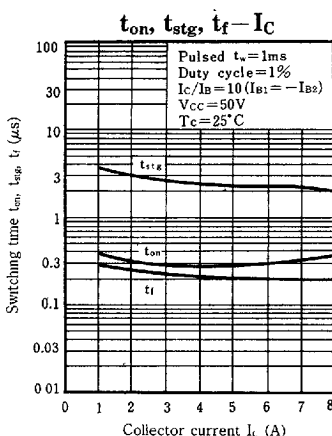
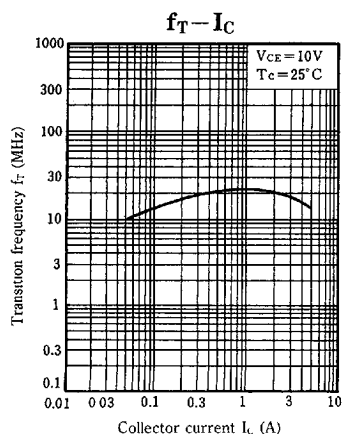
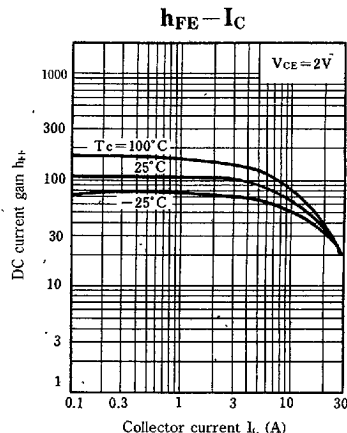
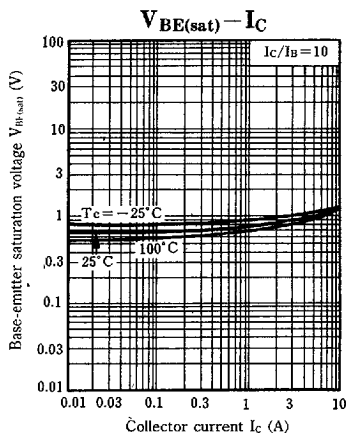
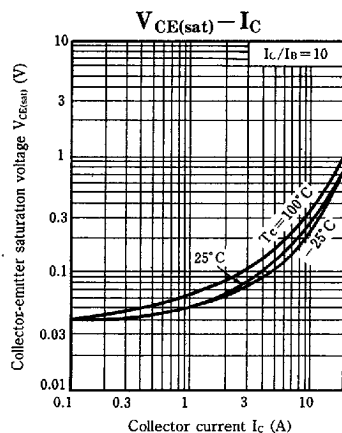
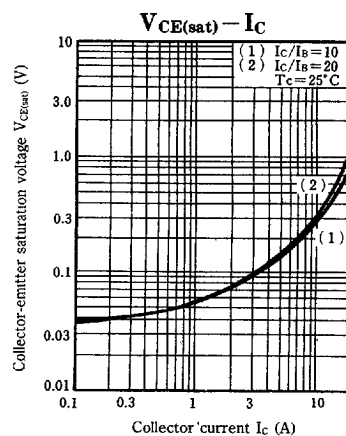
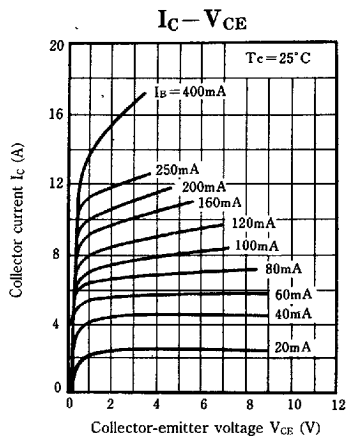
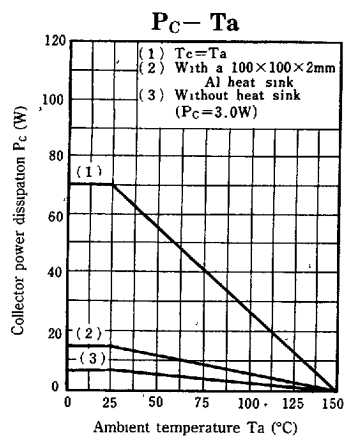
Electrical Characteristics ($T_c=25^{\circ}C$)

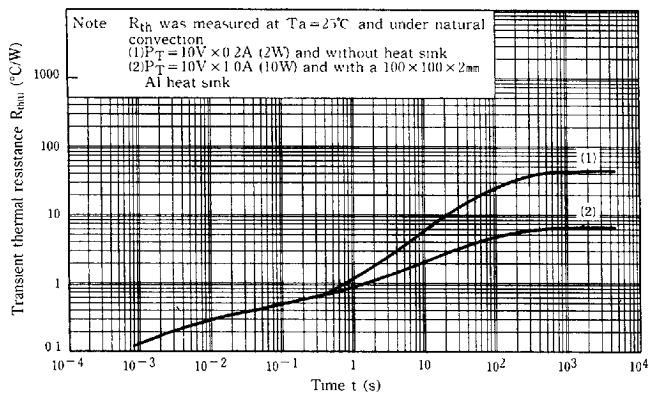
Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB}=100V, I_E=0$			10	μA
Emitter cutoff current	I_{EBO}	$V_{EB}=5V, I_C=0$			50	μA
Collector-emitter voltage	V_{CEO}	$I_C=10mA, I_B=0$	80			V
DC current gain	h_{FE1}	$V_{CE}=2V, I_C=0.1A$	45			
	h_{FE2}^*	$V_{CE}=2V, I_C=3A$	60		260	
	h_{FE3}	$V_{CE}=2V, I_C=6A$	30			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C=6A, I_B=0.3A$			0.5	V
	$V_{CE(sat)2}$	$I_C=10A, I_B=1A$			1.5	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	$I_C=6A, I_B=0.3A$			1.5	V
	$V_{BE(sat)2}$	$I_C=10A, I_B=1A$			2.5	V
Transition frequency	f_T	$V_{CE}=10V, I_C=0.5A, f=1MHz$		20		MHz
Turn-on time	t_{on}	$I_C=6A, I_{B1}=0.6A, I_{B2}=-0.6A$ $V_{CC}=50V$		0.5		μs
Storage time	t_{sig}			2.0		μs
Fall time	t_f			0.2		μs

* h_{FE2} Classifications

Class	R	Q	P
h_{FE2}	60~120	90~180	130~260

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Panasonic