

2SC4442

PANASONIC INDL/ELEK(SEMI) 69E D

Silicon NPN Triple-Diffused Planar Type

High Breakdown Voltage, High Speed Switching

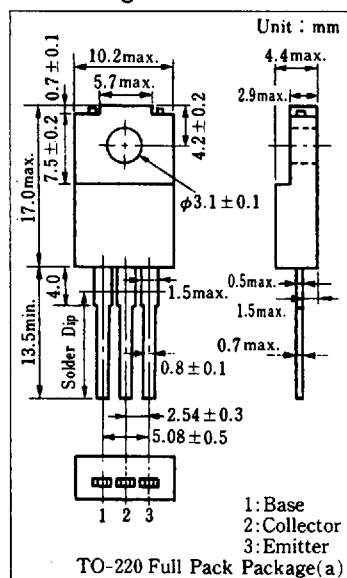
■ Features

- High speed switching
- High collector-base voltage (V_{CB0})
- Wide area of safety operation (ASO)
- Good linearity of DC current gain (h_{FE})
- "Full Pack" package for simplified mounting on a heat sink with one screw

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

Item	Symbol	Value	Unit
Collector-base voltage	V_{CB0}	500	V
Collector-emitter voltage	V_{CES}	500	V
	V_{CEO}	400	V
Emitter-base voltage	V_{EBO}	7	V
Peak collector current	I_{CP}	8	A
Collector current	I_C	4	A
Base current	I_B	1.6	A
Collector power dissipation	$T_c=25^\circ\text{C}$	45	W
	$T_a=25^\circ\text{C}$	2	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

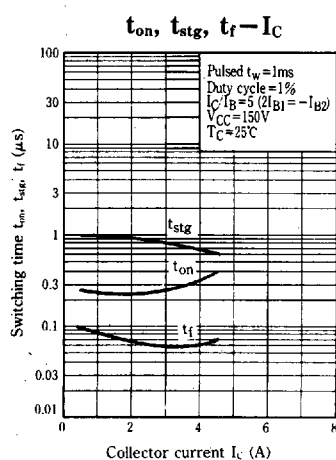
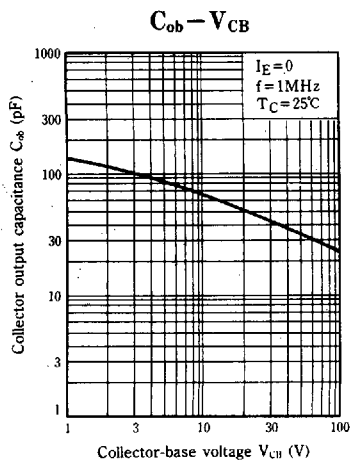
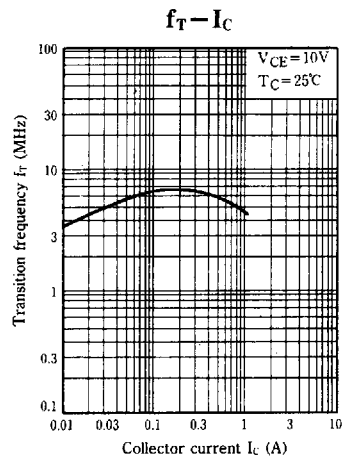
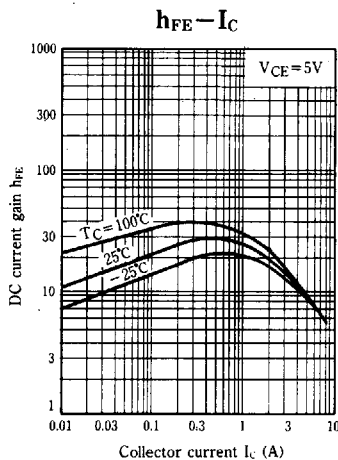
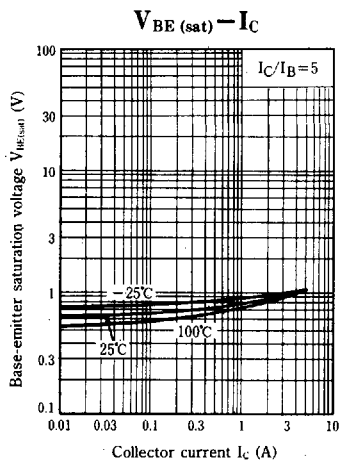
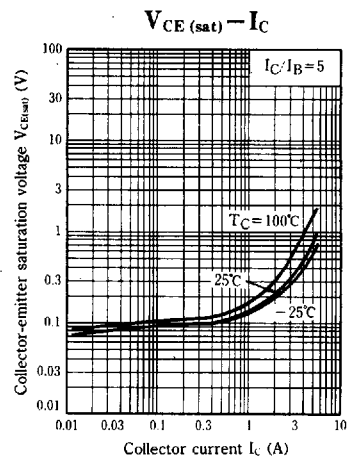
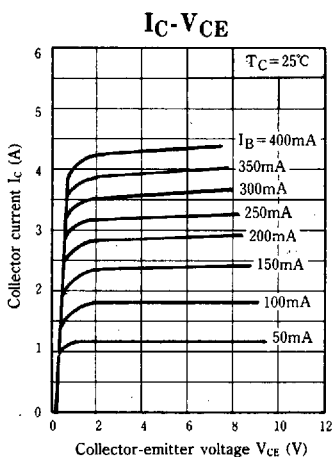
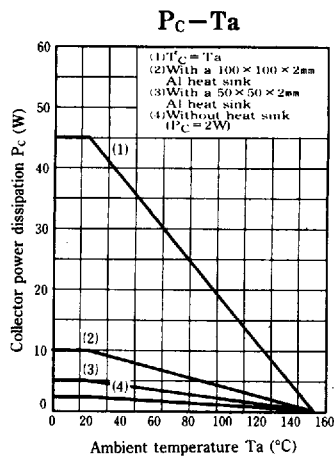
■ Package Dimensions



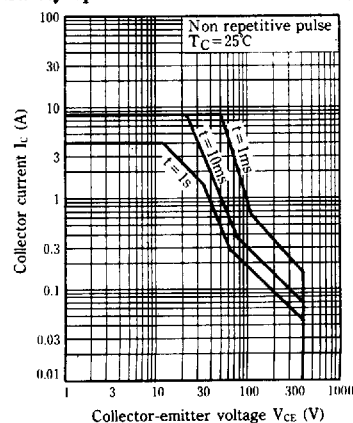
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB}=500\text{V}, I_E=0$			100	μA
Emitter cutoff current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			100	μA
Collector-emitter voltage	V_{CEO}	$I_C=10\text{mA}, I_B=0$	400			V
DC current gain	h_{FE1}	$V_{CE}=5\text{V}, I_C=0.1\text{A}$	10			
	h_{FE2}	$V_{CE}=5\text{V}, I_C=2\text{A}$	6			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=2\text{A}, I_B=0.4\text{A}$			1.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=2\text{A}, I_B=0.4\text{A}$			1.5	V
Transition frequency	f_T	$V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1\text{MHz}$		5		MHz
Turn-on time	t_{on}	$I_C=2\text{A}$			0.5	μs
Storage time	t_{sig}	$I_{B1}=0.4\text{A}, I_{B2}=-0.8\text{A}$			2.0	μs
Collector current fall time	t_f	$V_{CC}=150\text{V}$			0.1	μs

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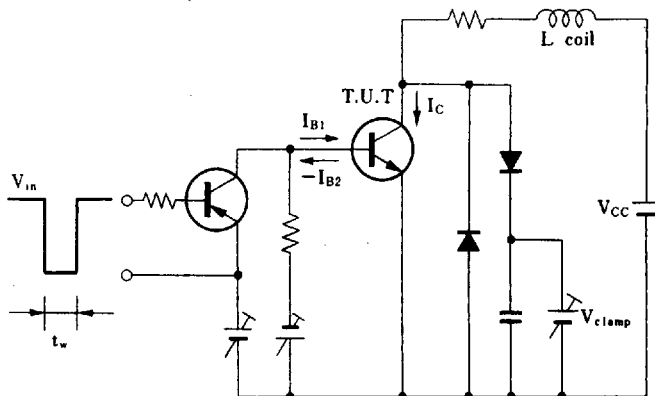
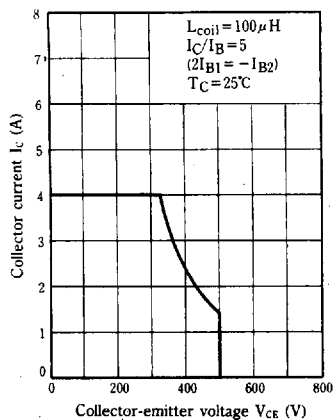


Safety operation area-forward bias (ASO)



Safety operation area-reverse bias (ASO)

Measurement circuit of reverse bias ASO



$R_{th(t)} - t$

