

2SD2000

Silicon NPN Triple-Diffused Planar Type

Power Switching

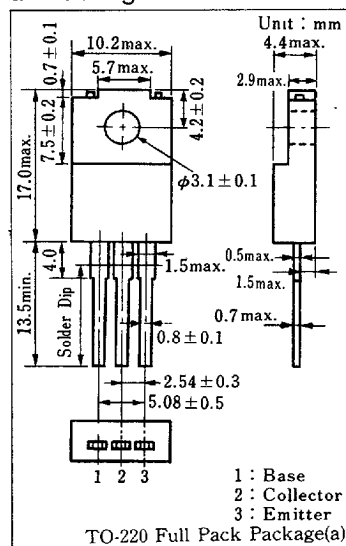
■ Features

- High speed switching
- Good linearity of DC current gain (h_{FE})
- Large collector power dissipation (P_C)
- "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}	80	V
Collector-emitter voltage	V_{CE0}	60	V
Emitter-base voltage	V_{EB0}	6	V
Peak collector current	I_{CP}	8	A
Collector current	I_C	4	A
Base current	I_B	1	A
Collector power dissipation	$T_C=25^\circ\text{C}$	P_C	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_{CB0}	$V_{CB}=80\text{V}, I_E=0$			100	μA
Emitter cutoff current	I_{EB0}	$V_{EB}=6\text{V}, I_C=0$			100	μA
Collector isolation voltage	V_{CE0}	$I_C=25\text{mA}, I_B=0$	60			V
DC current gain	h_{FE1}^*	$V_{CE}=4\text{V}, I_C=1\text{A}$	40		320	
	h_{FE2}	$V_{CE}=4\text{V}, I_C=4\text{A}$	20			
Base-emitter voltage	V_{BE}	$V_{CE}=4\text{V}, I_C=4\text{A}$			2.0	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=4\text{A}, I_B=0.4\text{A}$			1.5	V
Transition frequency	f_T	$V_{CE}=12\text{V}, I_C=0.2\text{A}, f=10\text{MHz}$		80		MHz
Turn-on time	t_{on}	$I_{C1}=4\text{A}, I_{B2}=-0.4\text{A}$ $V_{CC}=50\text{V}$		0.3		μs
Storage time	t_{stg}			1.0		μs
Collector current fall time	t_f			0.2		μs

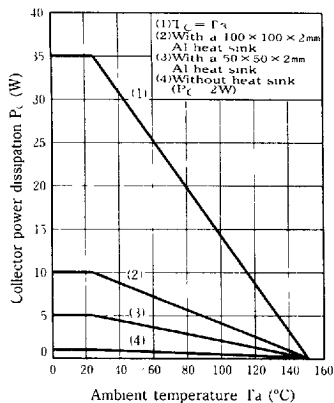
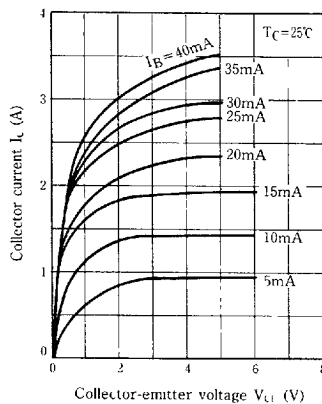
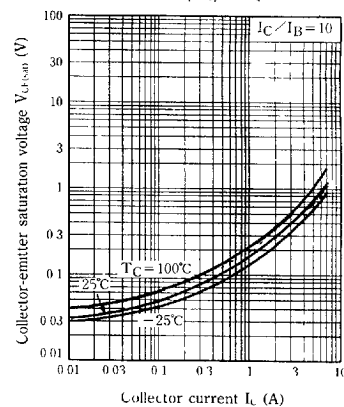
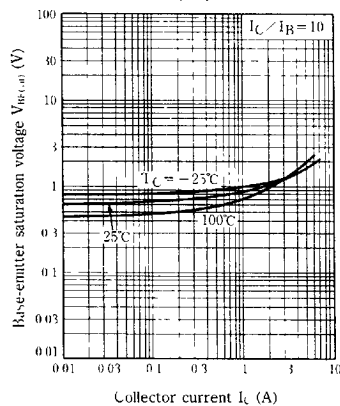
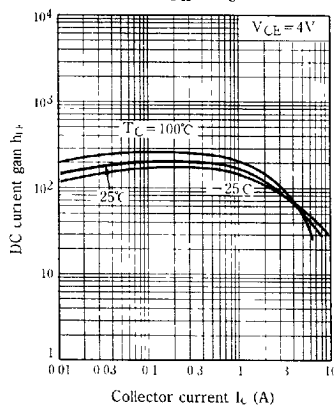
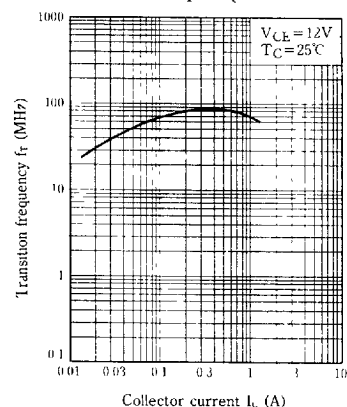
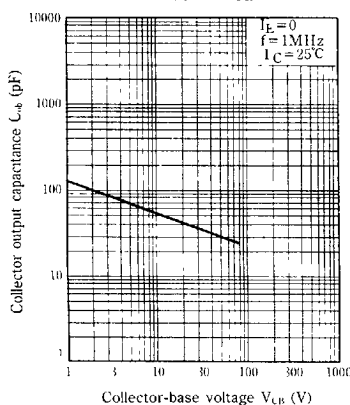
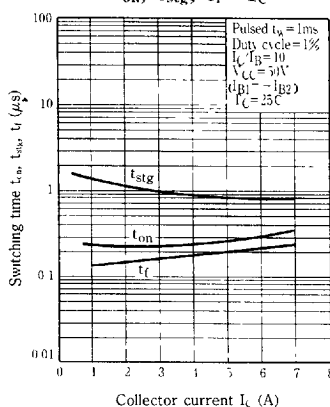
* h_{FE1} Classifications

Class	R	Q	P	O
h_{FE1}	40~90	70~150	120~250	160~320

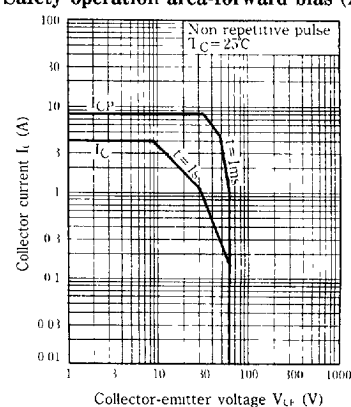
Panasonic

6932852 0016925 886

—924—

$P_C - T_a$  $I_C - V_{CE}$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_C$  $C_{ob} - V_{CB}$  $t_{on}, t_{stg}, t_f - I_C$ 

Safety operation area-forward bias (ASO)



6932852 0016926 712

-925-

Panasonic

