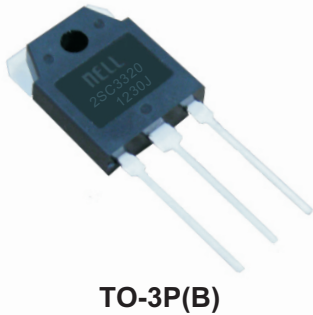


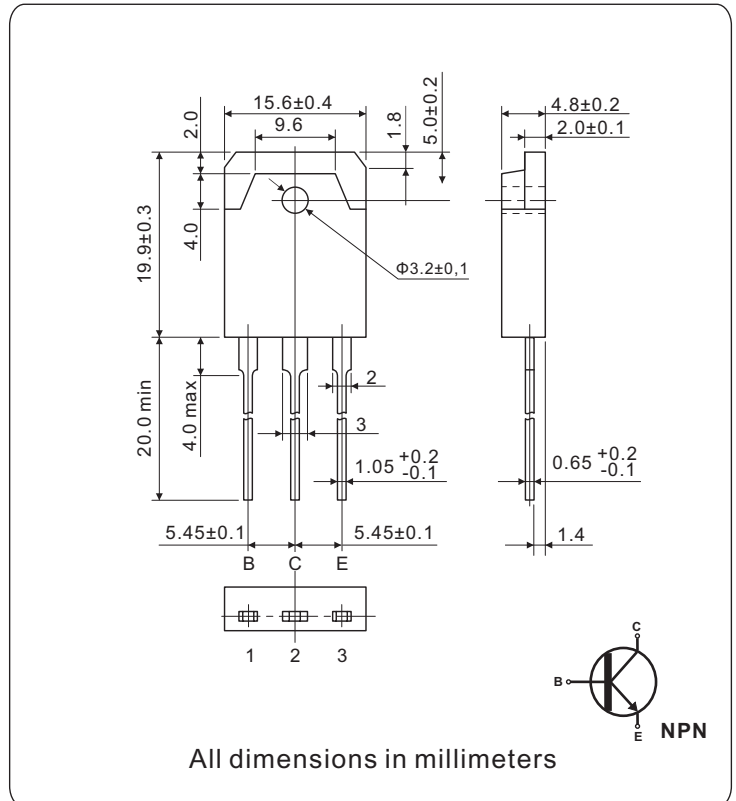
**Silicon NPN triple diffusion planar transistor
(High voltage switching transistor)
15A/400V/150W**


FEATURES

- High-speed switching
- High collector to base voltage, V_{CBO}
- Satisfactory linearity of forward current transfer ratio h_{FE}
- TO-3P package which can be installed to the heat sink with one screw

APPLICATIONS

- Switching regulator and general purpose
- Ultrasonic generators
- High frequency inverters
- General purpose power amplifiers


ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$)

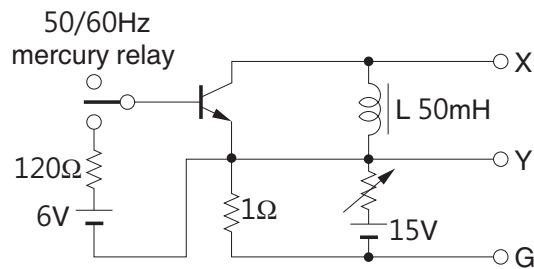
SYMBOL	PARAMETER		VALUE	UNIT
V_{CBO}	Collector to base voltage		500	V
V_{CEO}	Collector to emitter voltage		400	
$V_{CEO(SUS)}$			400	
V_{EBO}	Emitter to base voltage		7	A
I_C	Collector current		15	
I_B	Base current		5	
P_C	Collector power dissipation	$T_C = 25^\circ\text{C}$	150	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55 to 150	

THERMAL RESISTANCE

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th(j-c)}$	Thermal resistance, Junction to case (MAX.)	1.55	$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS (T _C = 25°C)					
SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V _{CEO}	Collector to emitter voltage	I _{CEO} = 10mA	400		V
V _{CEO(SUS)} *		I _C = 0.2A, L = 50mH			
V _{CBO}	Collector to base voltage	I _{CBO} = 1mA	500		
V _{EBO}	Emitter to base voltage	I _{EBO} = 1mA	7		
I _{CBO}	Collector cutoff current	V _{CBO} = 500V, I _E = 0		1	mA
I _{EBO}	Emitter cutoff current	V _{EBO} = 7V, I _C = 0		1	
h _{FE}	Forward current transfer ratio	V _{CE} = 5V, I _C = 6A	10		
V _{CE(sat)}	Collector to emitter saturation voltage	I _C = 6A, I _B = 1.2A		1	V
V _{BE(sat)}	Base to emitter saturation voltage	I _C = 6A, I _B = 1.2A		1.5	
t _{on}	Turn-on time	I _C = 7.5A, I _{B1} = 1.5A, I _{B2} = -3A R _L = 20Ω, P _W = 20μs, Duty ≤ 2%		0.5	μA
t _{stg}	Storage time			1.5	
t _f	Fall time			0.15	

*V_{CEO(SUS)} Test circuit



• Switching time test circuit

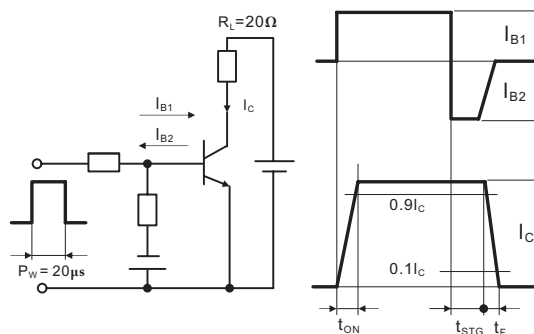


Fig.1 Collector output characteristics

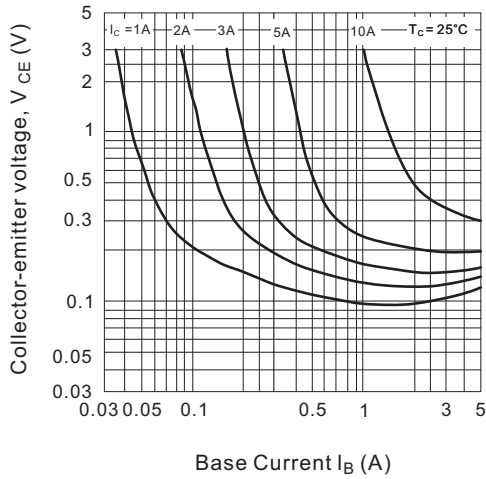


Fig.2 Base and collector saturation voltage

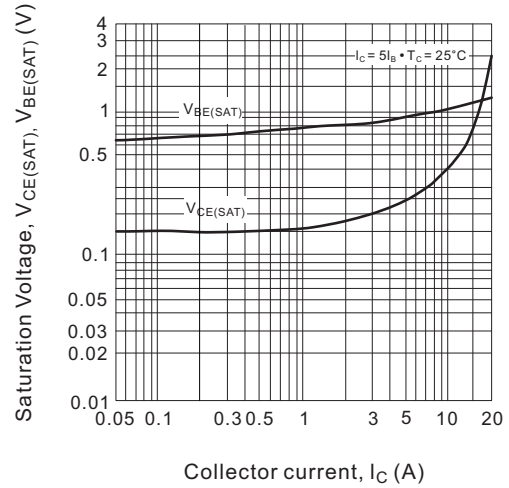


Fig.3 Switching time

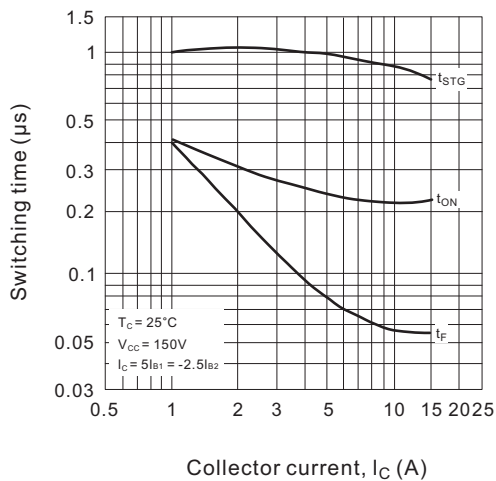


Fig.4 H_{FE} - I_C Characteristics

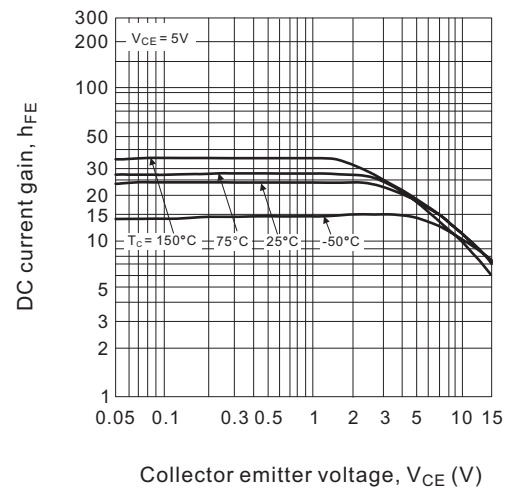


Fig.5 Safe operation area

