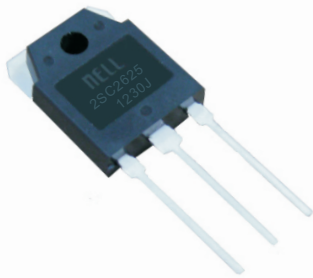


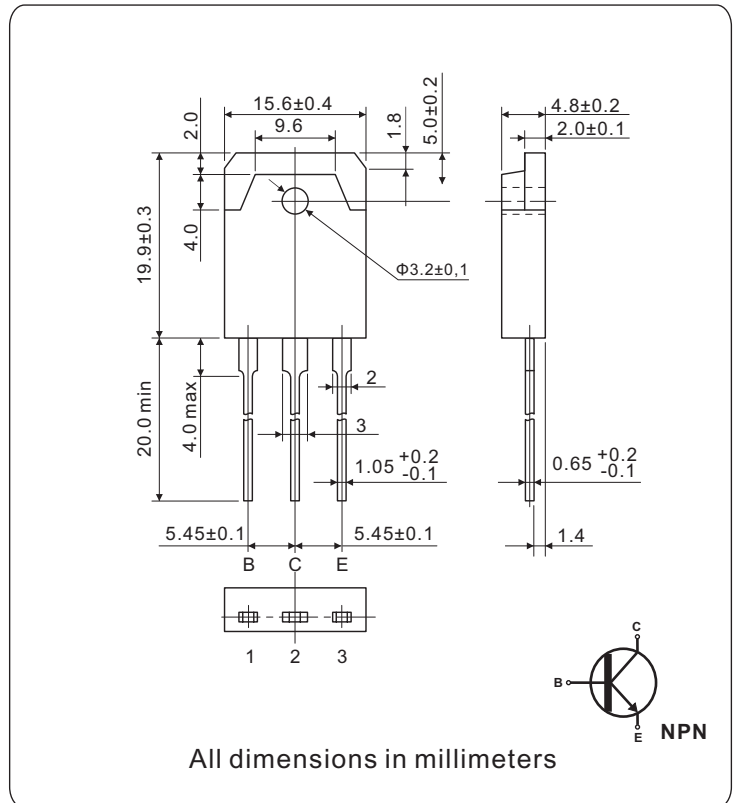
**Silicon NPN triple diffusion planar transistor
(High voltage switching transistor)
10A/400V/80W**


TO-3P(B)
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

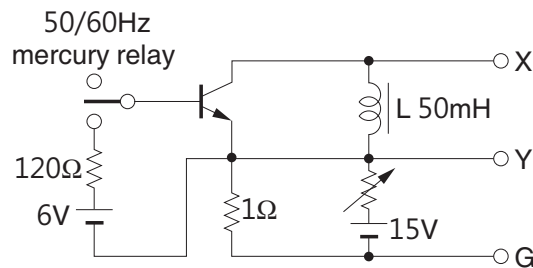


ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$)			
SYMBOL	PARAMETER		UNIT
V_{CBO}	Collector to base voltage		V
V_{CEO}	Collector to emitter voltage		
$V_{CEO(SUS)}$			
V_{EBO}	Emitter to base voltage		
I_C	Collector current		A
I_B	Base current		
P_C	Collector power dissipation	$T_C = 25^\circ\text{C}$	W
T_j	Junction temperature		$^\circ\text{C}$
T_{stg}	Storage temperature		

THERMAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$)			
SYMBOL	PARAMETER		UNIT
$R_{th(j-c)}$	Thermal resistance, junction to case		$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$)					
SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
I_{CBO}	Collector cutoff current	$V_{CBO} = 450\text{V}, I_E = 0$		1.0	mA
I_{EBO}	Emitter cutoff current	$V_{EBO} = 7\text{V}, I_C = 0$		0.1	
V_{CEO}	Collector to emitter voltage	$I_{CEO} = 10\text{mA}$	400		V
$V_{CEO(SUS)}^*$		$I_C = 1\text{A}, L = 50\text{mH}$			
V_{CBO}	Collector to base voltage	$I_{CBO} = 1\text{mA}$	450		
V_{EBO}	Emitter to base voltage	$I_{EBO} = 0.1\text{mA}$	7		
h_{FE}	Forward current transfer ratio (DC current gain)	$V_{CE} = 5\text{V}, I_C = 4\text{A}$	10		
$V_{CE(sat)}$	Collector to emitter saturation voltage	$I_C = 4\text{A}, I_B = 0.8\text{A}$		1.2	V
$V_{BE(sat)}$	Base to emitter saturation voltage	$I_C = 4\text{A}, I_B = 0.8\text{A}$		1.5	
t_{on}	Turn-on time	$I_C = 7.5\text{A}, I_{B1} = 1.5\text{A}, I_{B2} = -1.5\text{A}$ $R_L = 20\Omega, P_W = 20\mu\text{s}$, Duty $\leq 2\%$		1.0	μS
t_{stg}	Storage time			2.0	
t_f	Fall time			1.0	

* $V_{CEO(SUS)}$ Test circuit



• Switching time test circuit

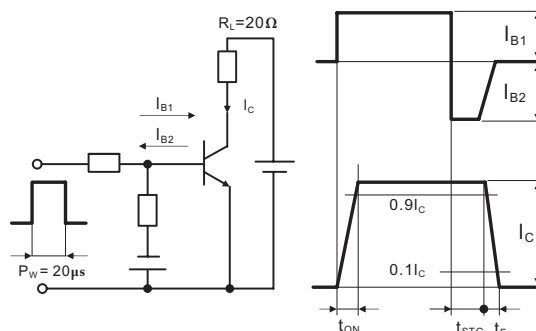


Fig.1 Collector output characteristics

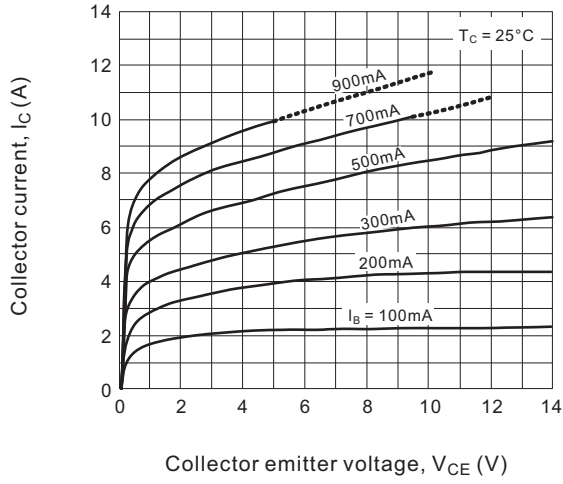


Fig.2 Base and collector saturation voltage

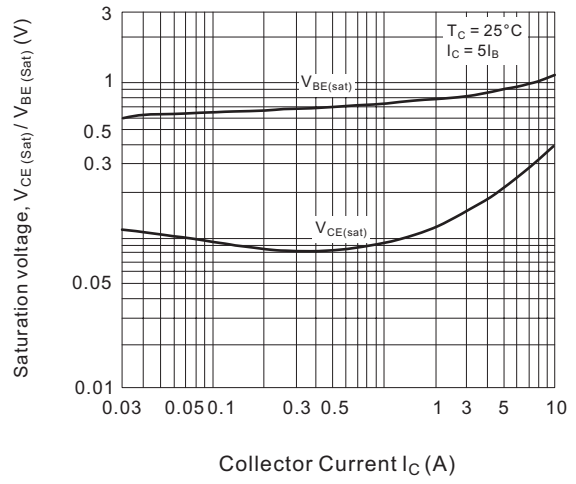


Fig.3 Switching time

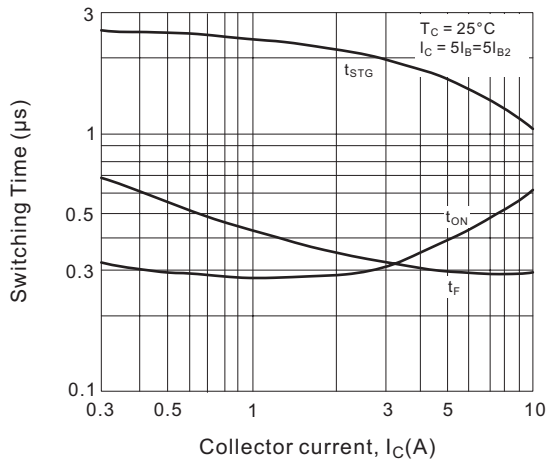


Fig.4 DC Current gain

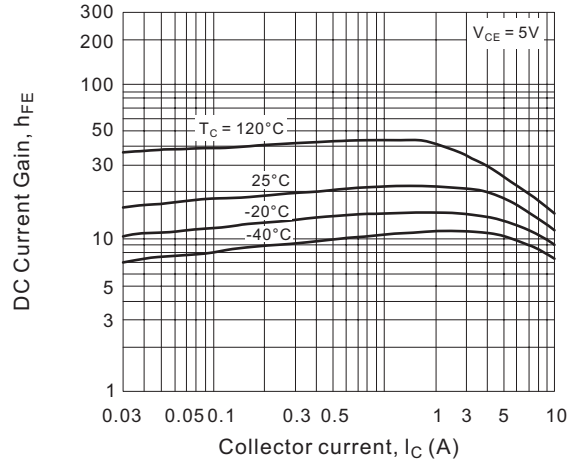


Fig.5 Safe operating area

