2SC4528

Silicon NPN Triple-Diffused Planar Darlington Type

High Power Switching

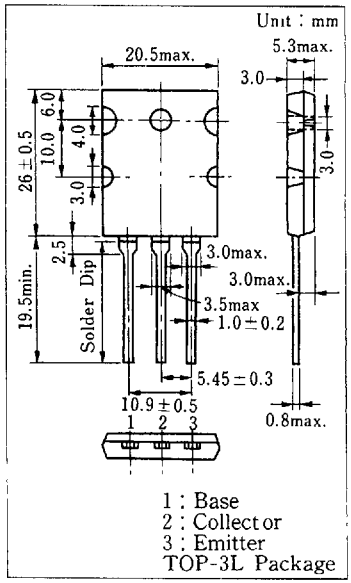
■ Features

- High speed switching
- High collector-base voltage (V_{CBO})
- Wide area of safety operation (ASO)
- Good linearity of DC current gain (h_{FE})

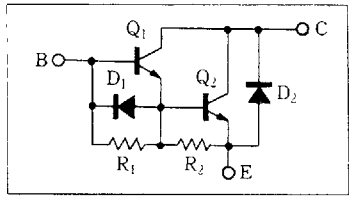
■ Absolute Maximum Ratings (Tc=25°C)

Item		Symbol	Value	Unit
Collector-base voltage		V_{CBO}	1500	V
Collector-emitter voltage		V_{CEO}	500	V
Emitter-base voltage		V_{EBO}	7	V
Peak collector current		I_{CP}	20	A
Collector current		I_C	10	A
Collector power dissipation	T_C=25°C	P_C	150	W
	Ta=25°C		3.5	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55~+150	°C

■ Package Dimensions



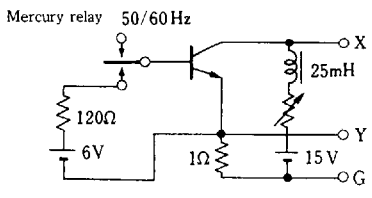
■ Inner Circuit

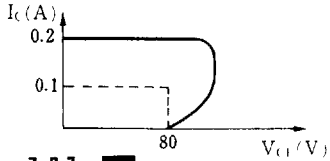


■ Electrical Characteristics (Tc=25°C)

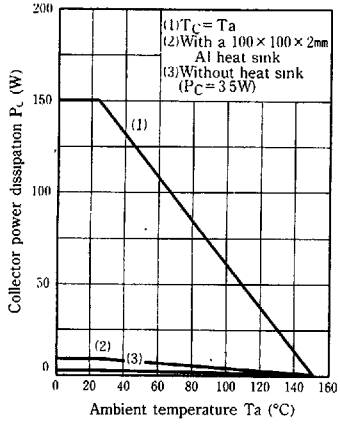
Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	V_{CB}=1500V, I_E=0			1	mA
Emitter cutoff current	I_{EBO}	V_{EB}=7V, I_C=0			500	mA
Collector-emitter voltage	$V_{CEO\ sus}$	I_C=0.25A, L=25mH	500			V
DC current gain	h_{FE}	V_{CE}=5V, I_C=10A	50		250	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C=10A, I_B=1A			2.0	V
Base-emitter saturation voltage	$V_{BE\ (sat)}$	I_C=10A, I_B=1A			2.5	V
Transition frequency	f_T	V_{CE}=10V, I_C=0.5A, f=1MHz		5		MHz
Turn-on time	t_{on}	I_C=10A			4.0	μs
Storage time	t_{stg}	I_{B1}=1A, I_{B2}=−5A			5.5	μs
Collector current fall time	t_f	V_{CC}=200V			4.0	μs
Diode forward voltage	V_F	I_C=−10A, I_B=0			2	V

*$V_{CEO\ (sus)}$ Test method

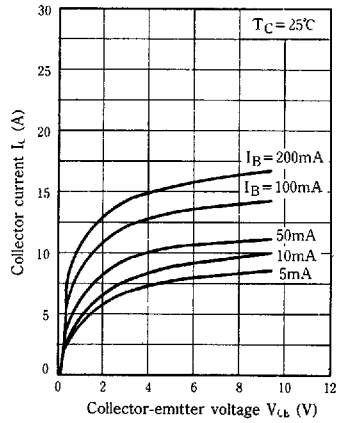




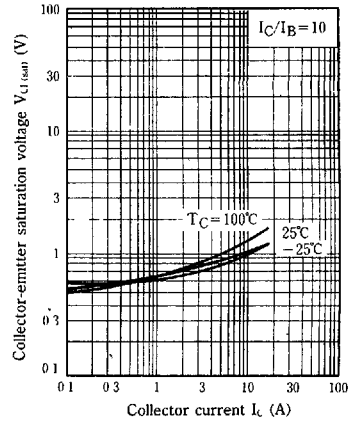
$P_C - Ta$



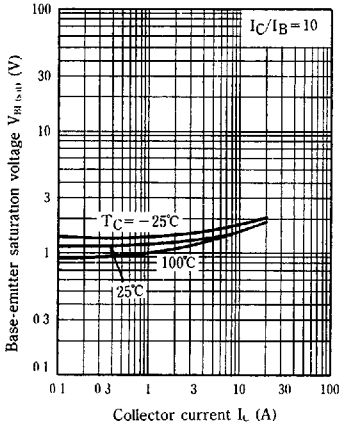
$I_C - V_{CE}$



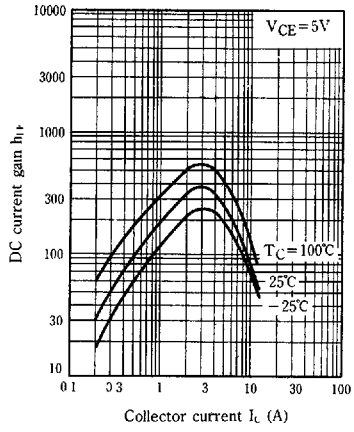
$V_{CE\ (sat)} - I_C$



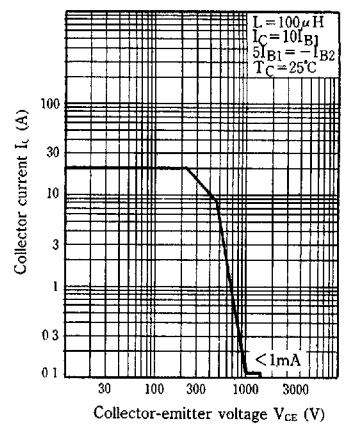
$V_{BE\ (sat)} - I_C$



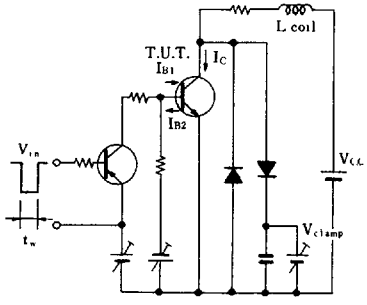
$h_{FE} - I_C$



Safety operation area-reverse bias (ASO)



Measurement circuit of reverse bias ASO



$R_{th(t)} - t$