JOYVIRTUE

2SC5388-LF

High-Voltage Switching Applications

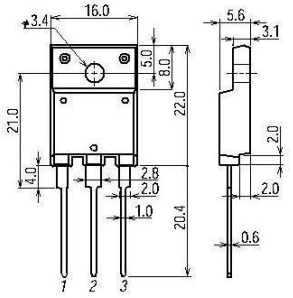
NPN Triple Diffused Planar Silicon Transistor

Features

- High speed (Adoption of MBIT process).
- High breakdown voltage (V_{CBO}=1500V).
- High reliability (Adoption of HVP process).
- On-chip damper diode.

Applications

- TV



1 : Base
2 : Collector
3 : Emitter

TO-3PML

Specifications

Absolute Maximum Ratings at Ta = 25°C

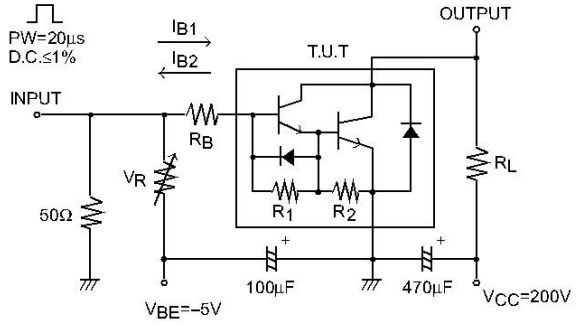
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		1500	V
Collector-to-Emitter Voltage	V_{CEO}		700	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		5	A
Collector Current (Pulse)	I_{CP}		10	A
Base Current	I_B		1	A
Collector Dissipation	P_C		3.0	W
		Tc=25°C	50	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		–55 to +150	°C

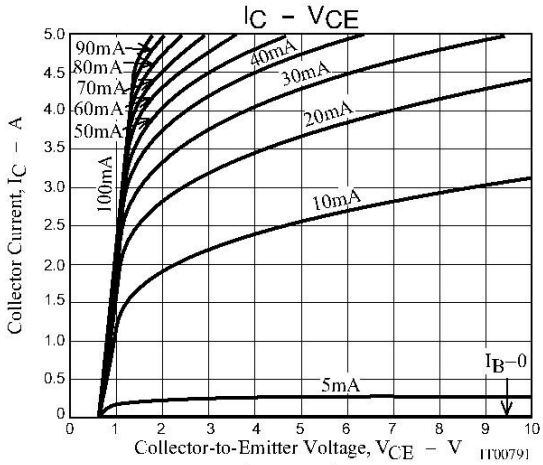
Electrical Characteristics at Ta = 25°C

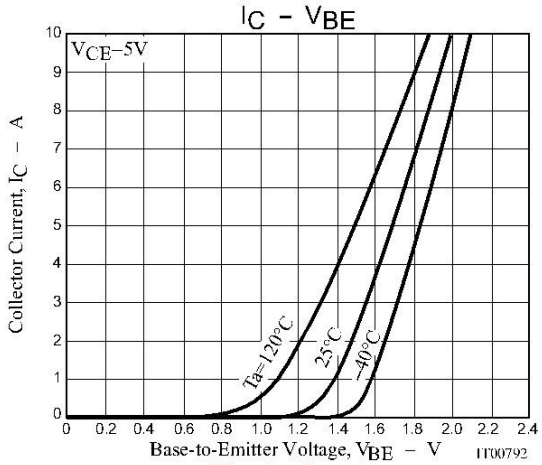
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=700V, I_E=0			0.1	mA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V, I_C=0			600	mA
DC Current Gain	$h_{FE}1$	V_{CE}=5V, I_C=1A	100		230	
	$h_{FE}2$	V_{CE}=5V, I_C=5A	50		150	

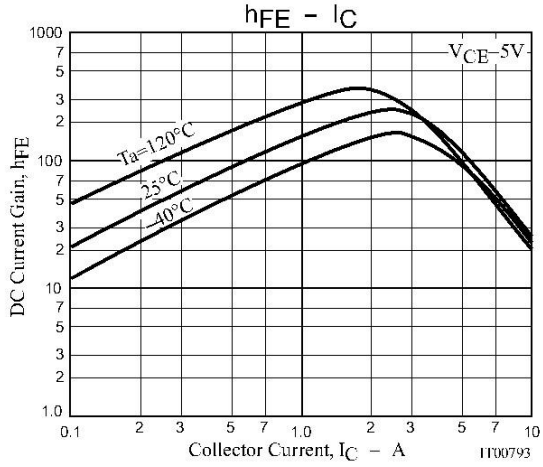
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Sustain Voltage	V_{CEO}(sus)	I_C=100mA, I_B=0	700			V
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=5A, I_B=0.5A			1.5	V
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=5A, I_B=0.5A			2.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=1mA, I_E=0	1500			V
Diode Forward Voltage	V_F	I_{EC}=5A			2.0	V
Fall Time	t_f	I_C=5A, I_{B1}=0.5A, I_{B2}=–2.5A, V_{CC}=200V, R_L=40Ω			0.8	μs
Storage Time	t_{stg}	I_C=5A, I_{B1}=0.5A, I_{B2}=–2.5A, V_{CC}=200V, R_L=40Ω			3	μs

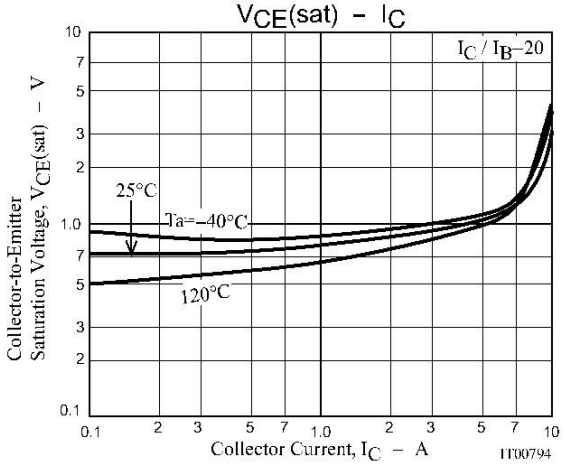
Switching Time Test Circuit



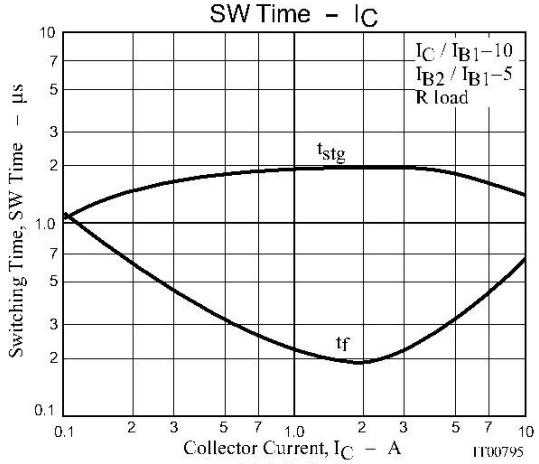




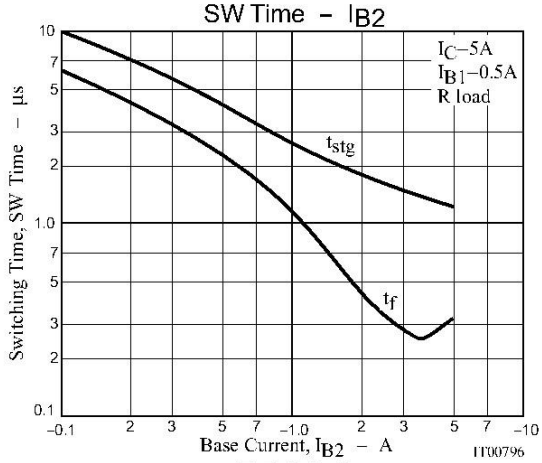




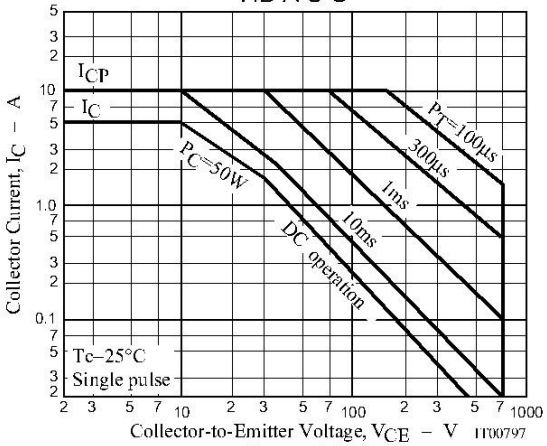
SW Time – I_C



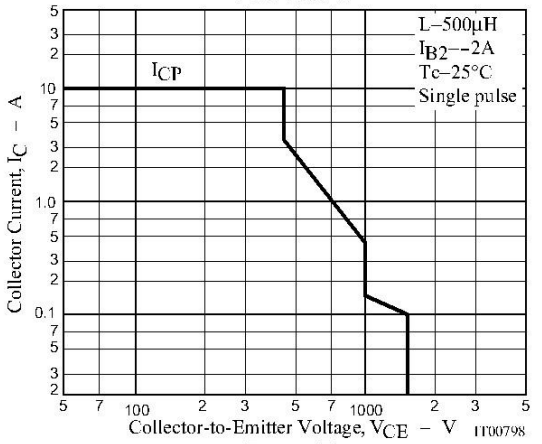
SW Time – I_{B2}



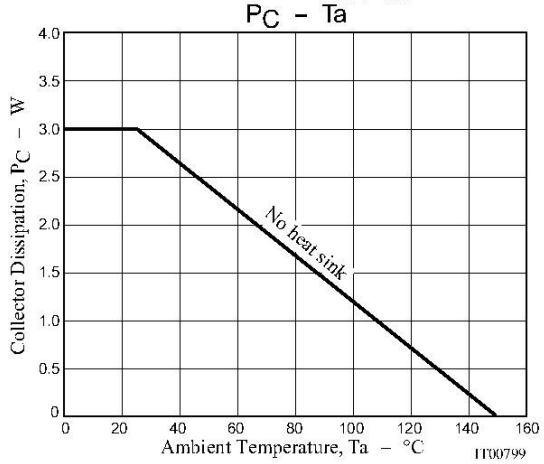
F.B A S O



R.B A S O



P_C – Ta



P_C – Tc