



SANYO Semiconductors

DATA SHEET

TT2042 — NPN Triple Diffused Planar Silicon Darlington Transistor

Driver Applications

Application

- Suitable for use in control motor drivers, printer hammer drivers, relay drivers, audio output and constant-voltage regulators.

Features

- High DC current gain.
- Wide ASO.
- Low saturation voltage.
- Adoption of MBIT process.

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		180	V
Collector-to-Emitter Voltage	V_{CEO}		160	V
Emitter-to-Base Voltage	V_{EB0}		6	V
Collector Current	I_C		10	A
Collector Current (Pulse)	I_{CP}		16	A
Collector Dissipation	P_C		2.5	W
		$T_c=25^\circ\text{C}$	110	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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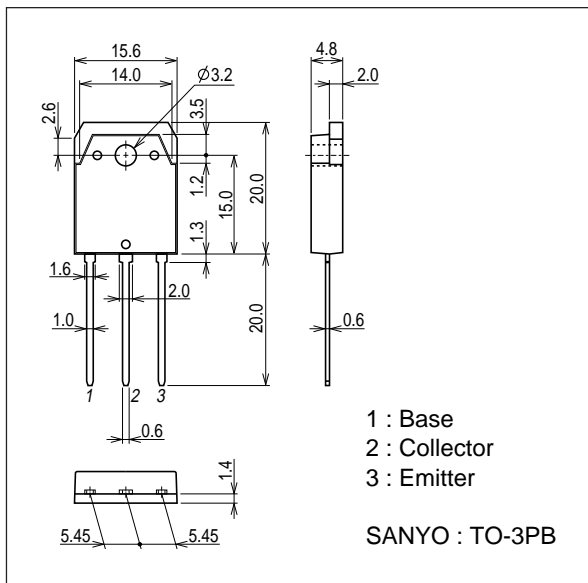
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=180V, I_E=0A$			0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=6V, I_C=0A$			10	mA
DC Current Gain	h_{FE}	$V_{CE}=5V, I_C=6.5A$	5000			
Gain-Bandwidth Product	f_T	$V_{CE}=5V, I_C=6.5A$		15		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=5.5A, I_B=11mA$			1.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=5.5A, I_B=11mA$			2.3	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0A$	180			V
Collector Sustain Voltage	$V_{CEO(SUS)}$	$I_C=100mA, I_B=0A$	160			V
Turn-ON Time	t_{on}	See specified Test Circuit.		0.9		μs
Storage Time	t_{stg}	See specified Test Circuit.		8.0		μs
Fall Time	t_f	See specified Test Circuit.		3.0		μs

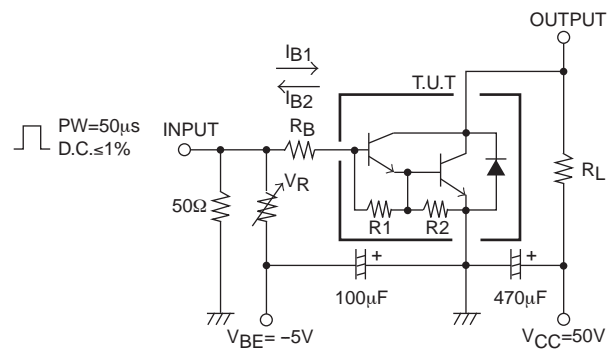
Package Dimensions

unit : mm (typ)

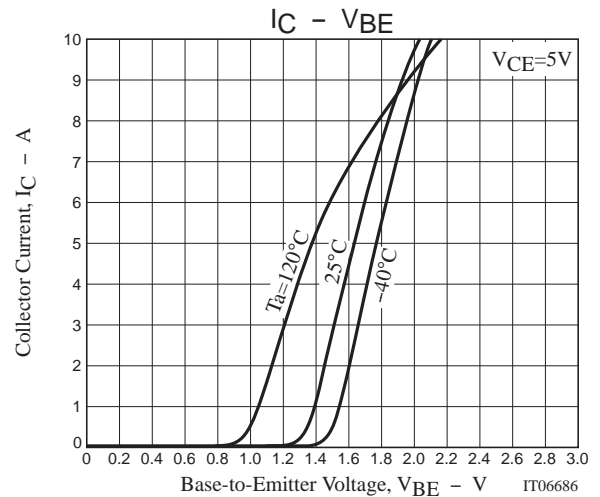
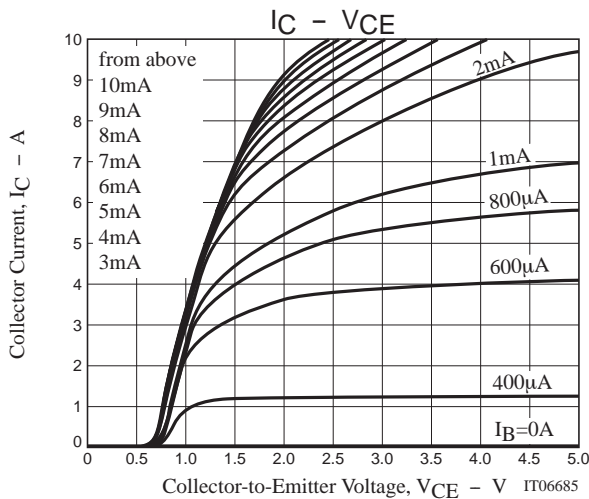
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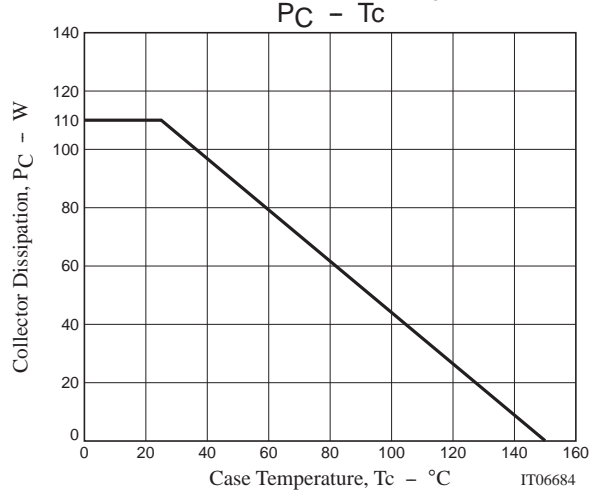
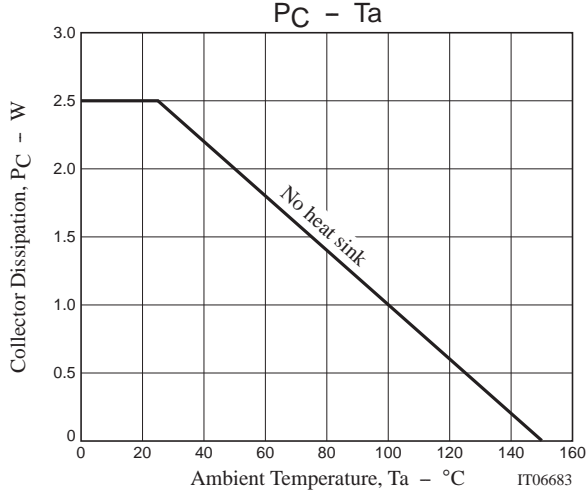
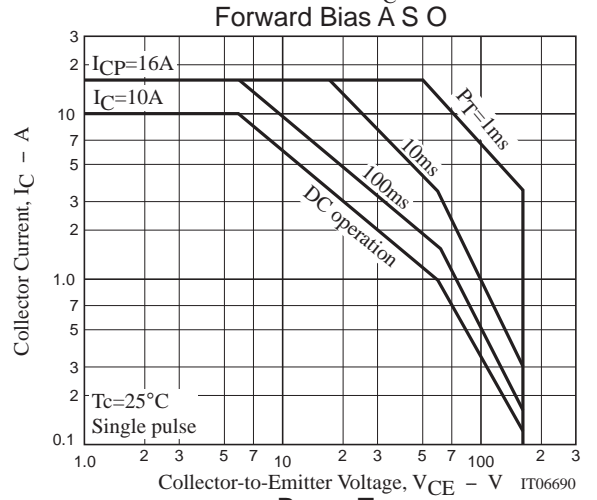
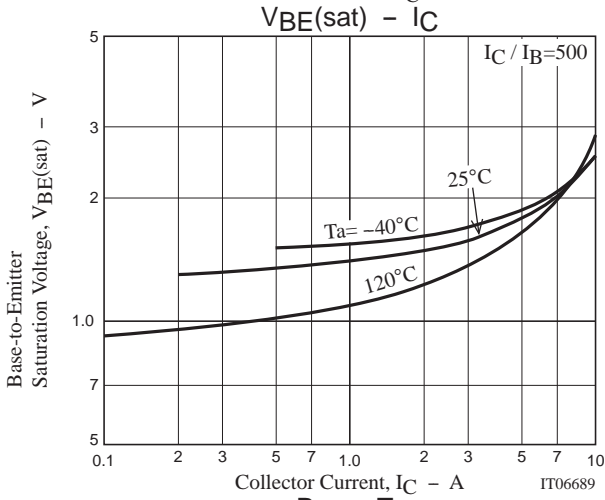
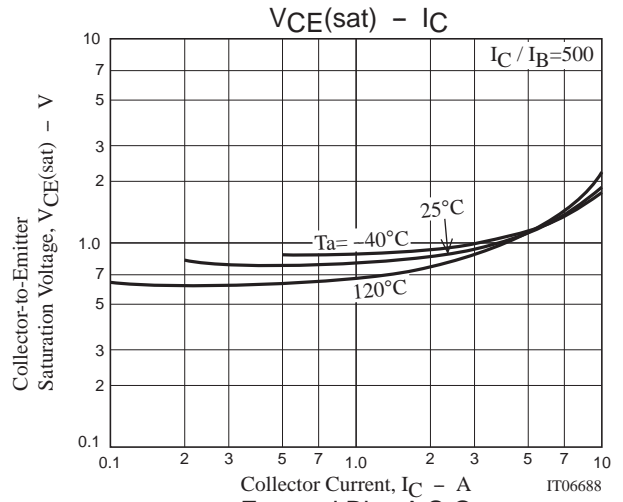
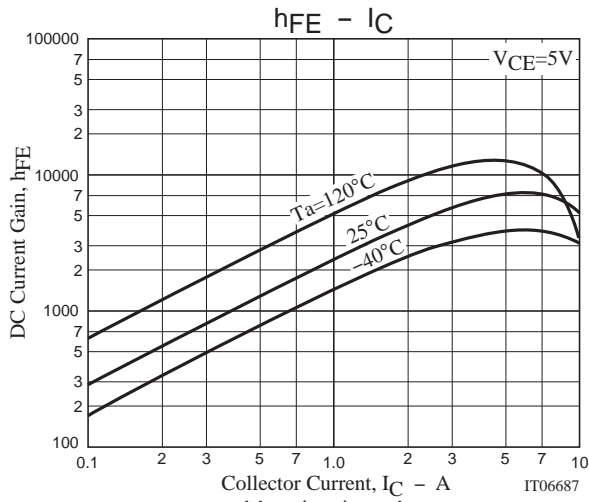


Switching Time Test Circuit



$$I_C = 500I_{B1} = 500I_{B2} = 6.5A$$





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