



# CPH3249

NPN Triple Diffused Planar Silicon Transistor

## Switching Regulator Applications

### Features

- High breakdown voltage.
- Ultrahigh-speed switching.
- Wide ASO.
- Adoption of MBIT process.

### Specifications

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		700	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		350	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		8	V
Collector Current	I <sub>C</sub>		1	A
Collector Current (Pulse)	I <sub>CP</sub>	PW≤300μs, duty cycle≤10%	2	A
Base Current	I <sub>B</sub>		0.5	A
Collector Dissipation	P <sub>C</sub>	Mounted on a ceramic board (600mm <sup>2</sup> ×0.8mm)	0.9	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

#### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =350V, I <sub>E</sub> =0A			10	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0A			10	μA
DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =0.1A	100		200	
	h <sub>FE2</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =0.5A	10			
	h <sub>FE3</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =1mA	60			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =0.1A		20		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		8		pF

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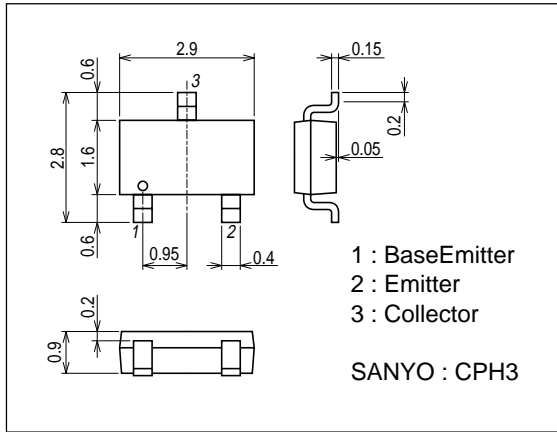
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.5A, I_B=0.1A$			0.8	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=0.5A, I_B=0.1A$			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0A$	700			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=5mA, R_{BE}=\infty$	350			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0A$	8			V
Turn-ON Time	$t_{on}$	$I_C=0.5A, I_{B1}=0.05A, I_{B2}=-0.5A, R_L=400\Omega, V_{CC}=200V$			1.0	$\mu s$
Storage Time	$t_{stg}$	$I_C=0.5A, I_{B1}=0.05A, I_{B2}=-0.5A, R_L=400\Omega, V_{CC}=200V$			2.5	$\mu s$
Fall Time	$t_f$	$I_C=0.5A, I_{B1}=0.05A, I_{B2}=-0.5A, R_L=400\Omega, V_{CC}=200V$			0.3	$\mu s$

Note : Since the above stated product is a high-voltage device, so please pay attention to its reliability when in use.

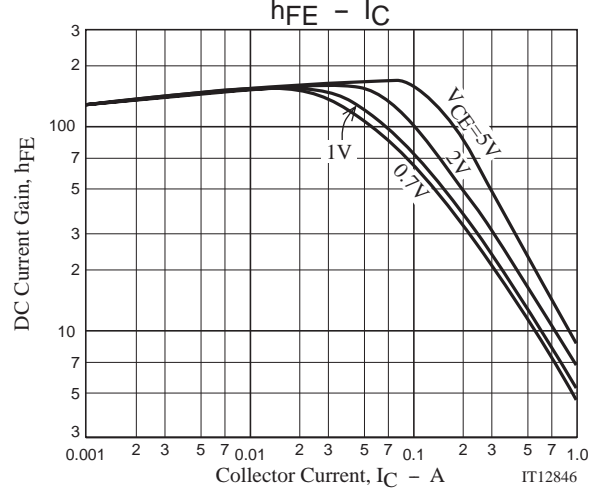
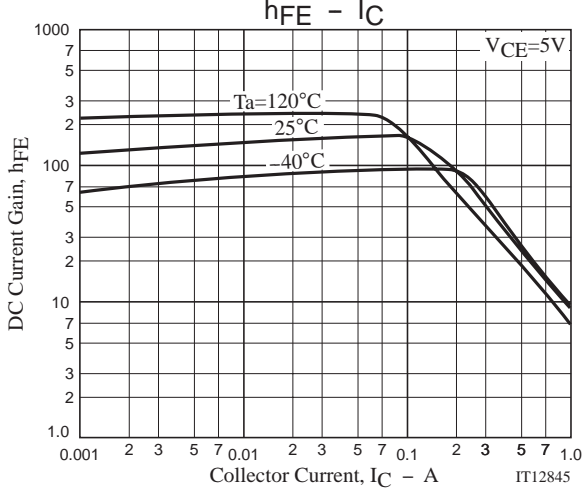
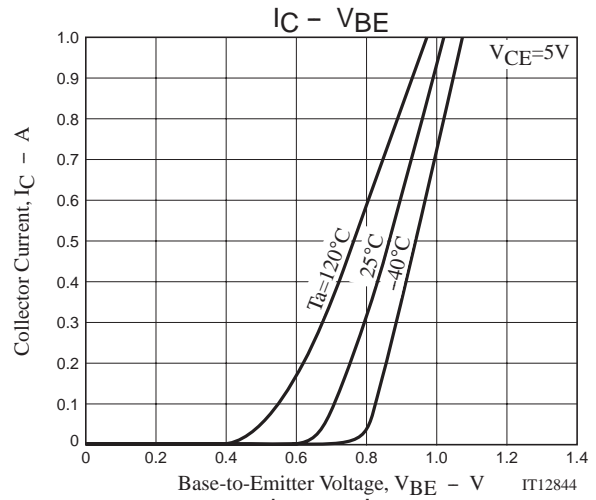
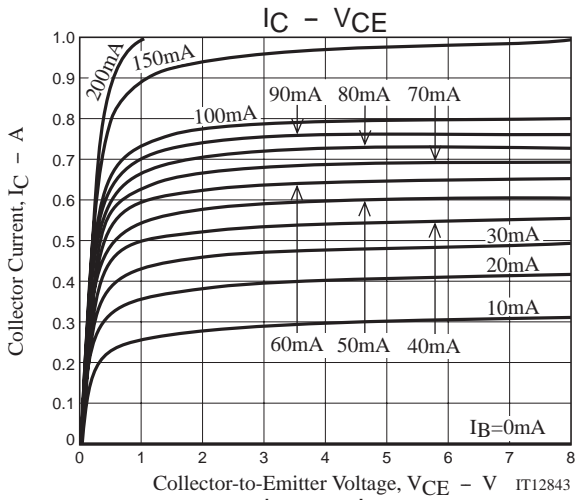
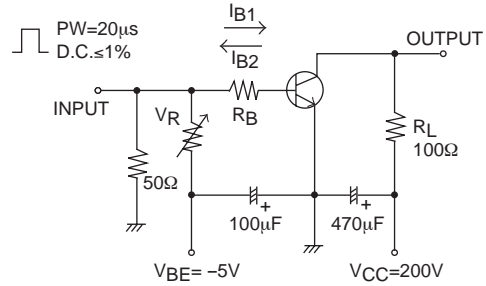
## Package Dimensions

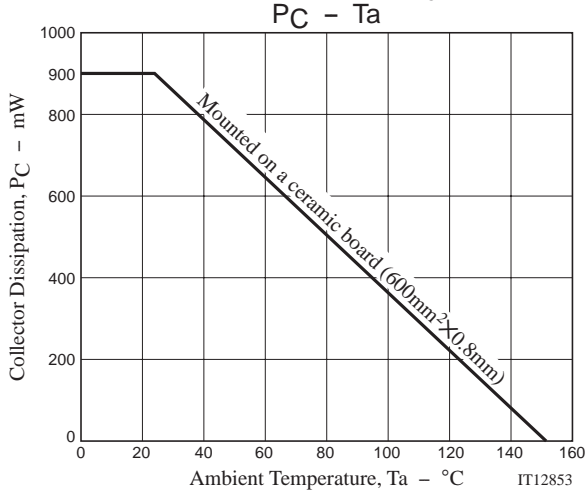
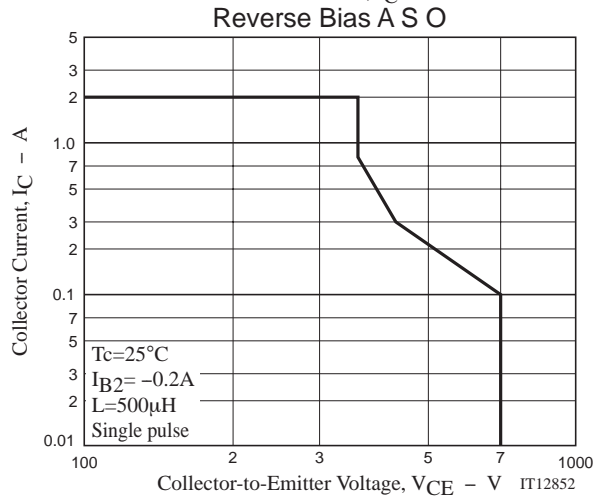
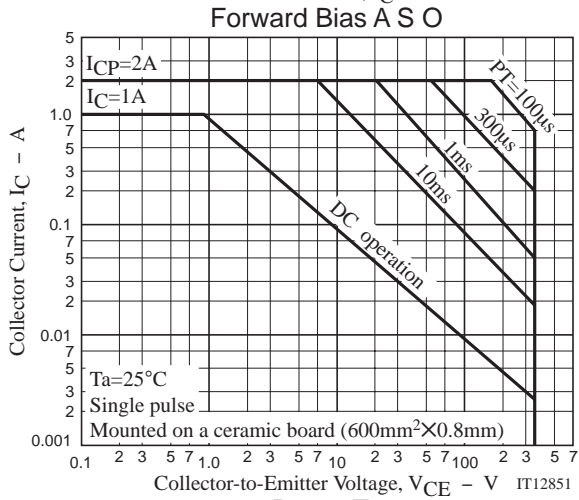
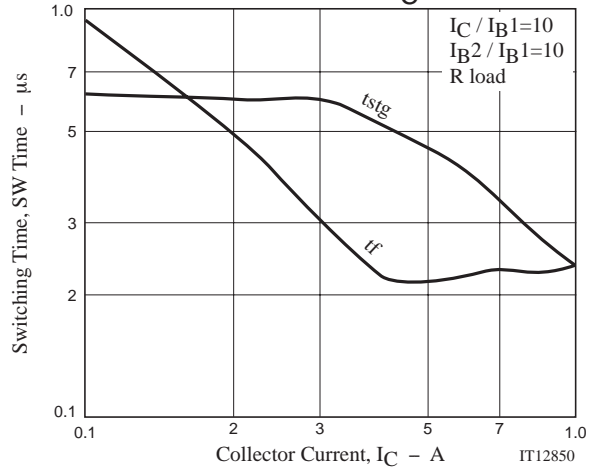
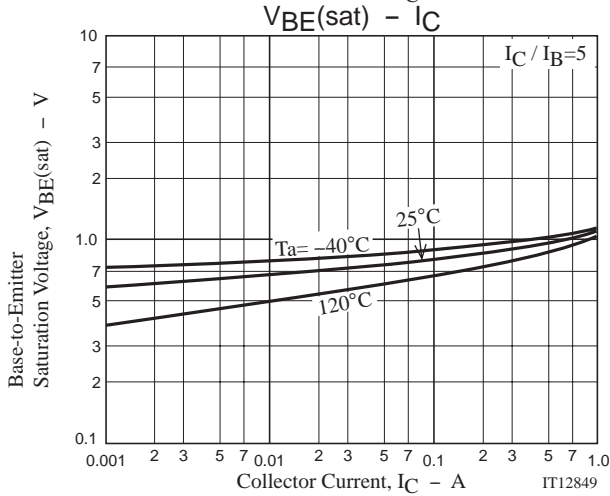
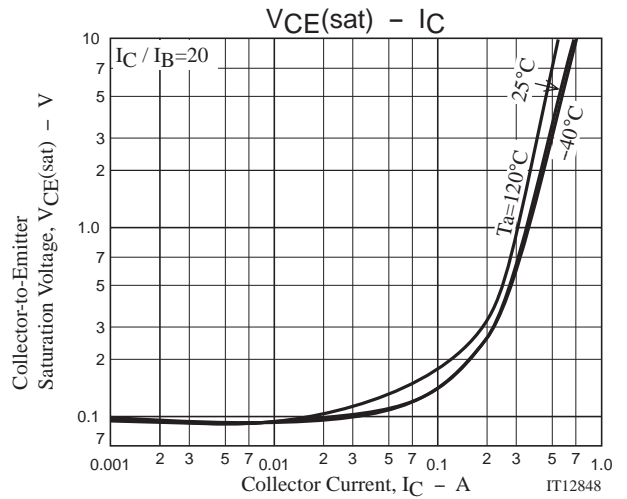
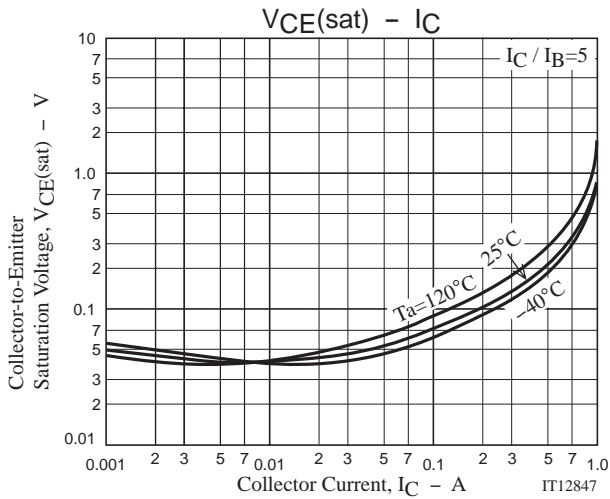
unit : mm (typ)

7015A-005



## Switching Time Test Circuit





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