



SANYO Semiconductors

DATA SHEET

CPH3239 — NPN Epitaxial Planar Silicon Transistors

DC / DC Converter Applications

Applications

- Relay drivers, lamp drivers, motor drivers, flash.

Features

- Adoption of MBIT process.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High speed switching.
- Narrow h_{FE} range.
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.9mm).
- High allowable power dissipation.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		100	V
Collector-to-Emitter Voltage	V _{CES}		100	V
Collector-to-Emitter Voltage	V _{CEO}		50	V
Emitter-to-Base Voltage	V _{EBO}		6	V
Collector Current	I _C		5	A
Collector Current (Pulse)	I _{CP}		7	A
Base Current	I _B		1.2	A
Collector Dissipation	P _C	Mounted on a ceramic board (600mm ² ×0.8mm)	0.9	W
Junction Temperature	T _j		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

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Electrical Characteristics at $T_a=25^\circ\text{C}$

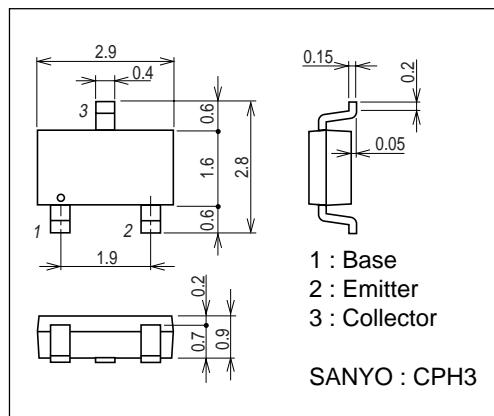
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=40\text{V}, I_E=0$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=2\text{V}, I_C=500\text{mA}$	250		400	
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=500\text{mA}$		330		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		26		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(\text{sat})}$	$I_C=2\text{A}, I_B=40\text{mA}$		85	130	mV
Base-to-Emitter Saturation Voltage	$V_{BE(\text{sat})}$	$I_C=2\text{A}, I_B=40\text{mA}$		0.80	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=100\mu\text{A}, R_{BE}=\infty$	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6			V
Turn-ON Time	t_{on}	See specified Test Circuit		32		ns
Storage Time	t_{stg}	See specified Test Circuit		420		ns
Fall Time	t_f	See specified Test Circuit		28		ns

Marking : DK

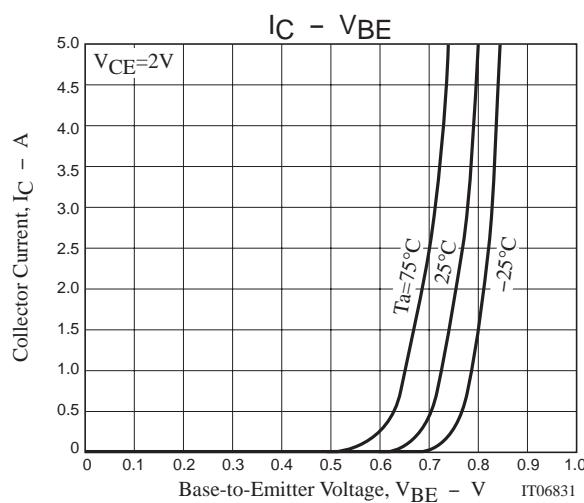
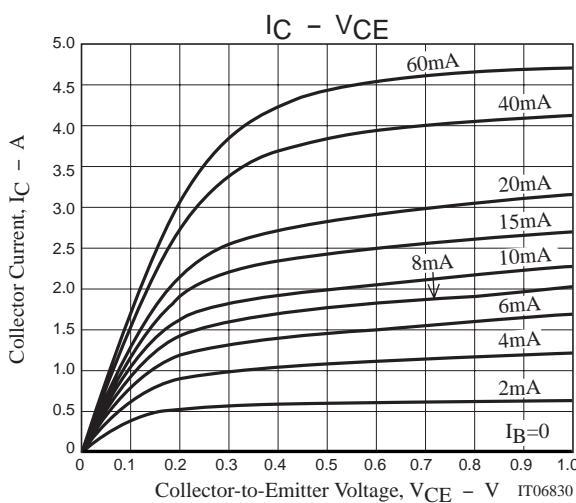
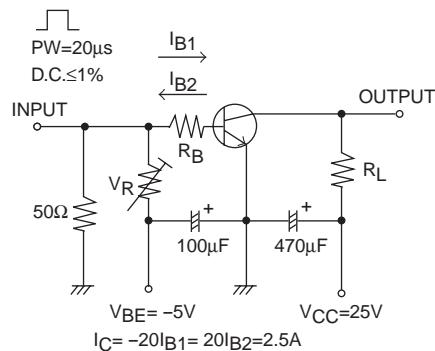
Package Dimensions

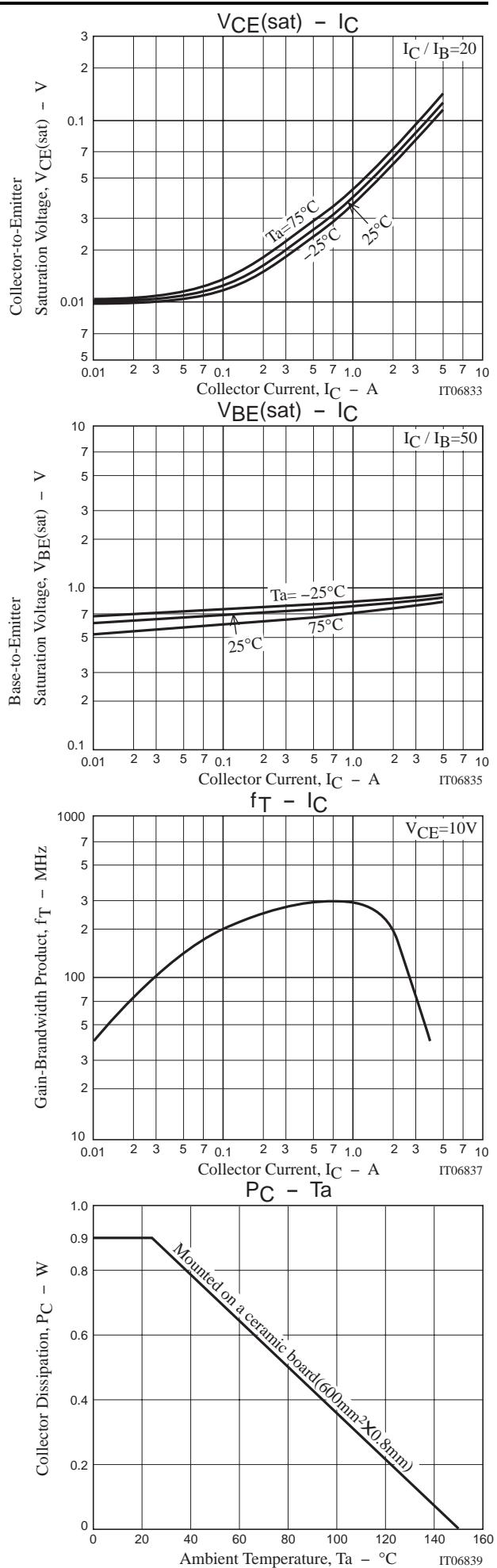
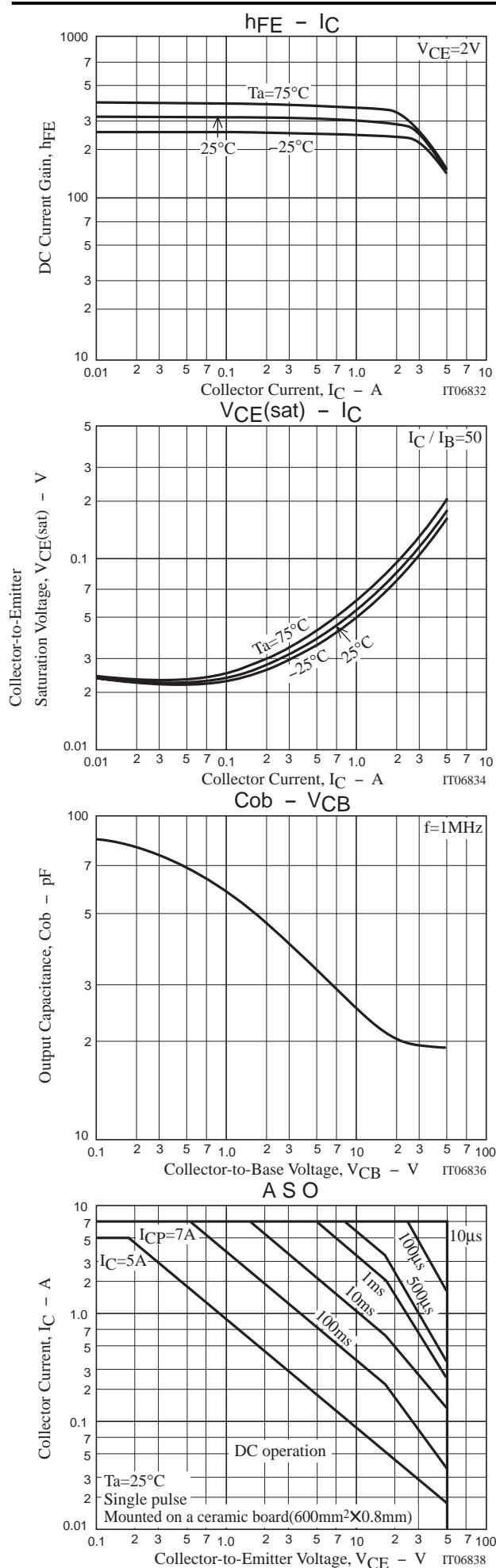
unit : mmm

2150A



Switching Time Test Circuit





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