Ordering number : ENN7723A

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 (600mm²×0.8mm)	0.9	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

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Electrical Characteristics at Ta=25°C

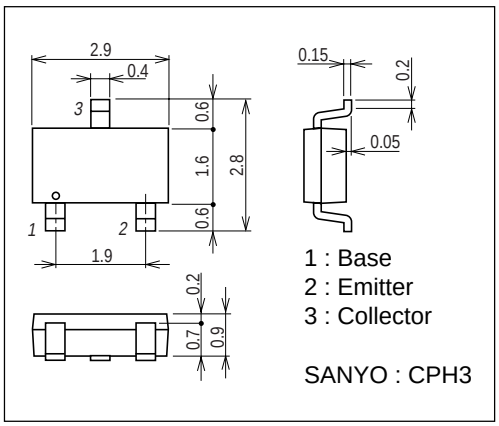
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=40V, I_E=0			0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0			0.1	μA
DC Current Gain	h_{FE}	V_{CE}=2V, I_C=500mA	250		400	
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=500mA		330		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		26		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=2A, I_B=40mA		85	130	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=2A, I_B=40mA		0.80	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C=100μA, R_{BE}=∞	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, 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

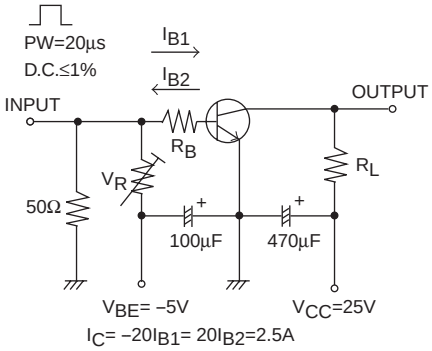
Package Dimensions

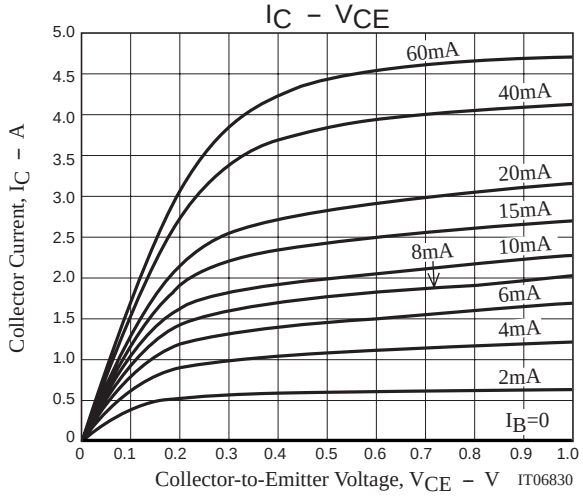
unit : mmm

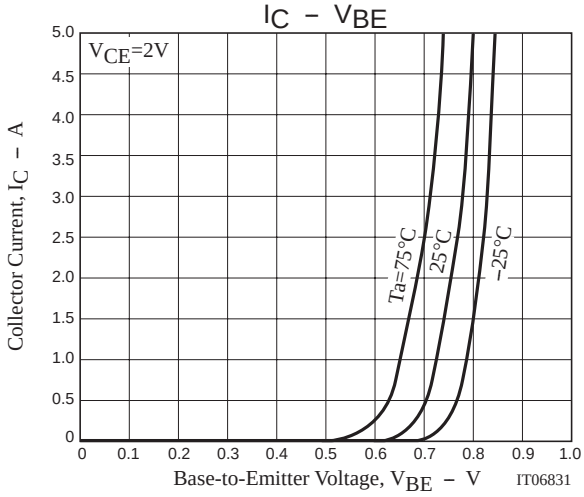
2150A



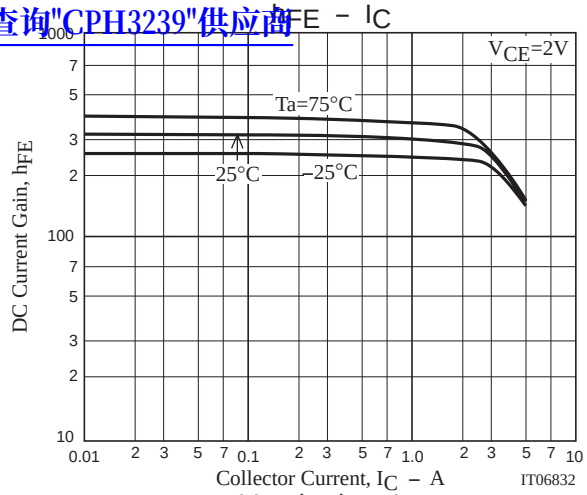
Switching Time Test Circuit



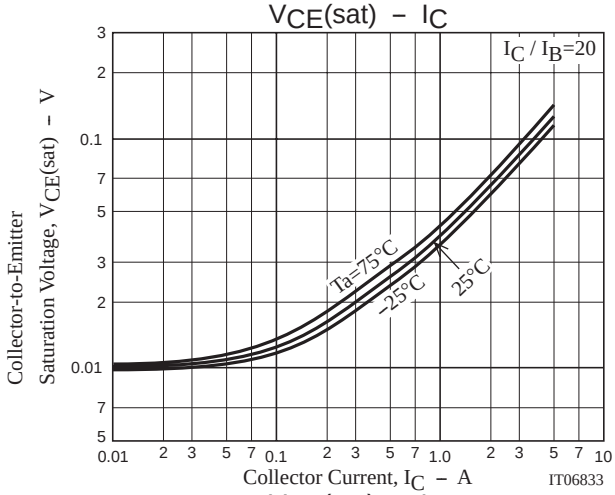




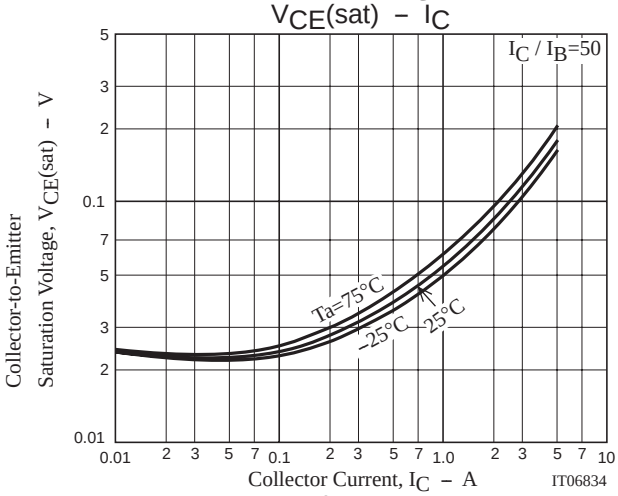
hFE – IC



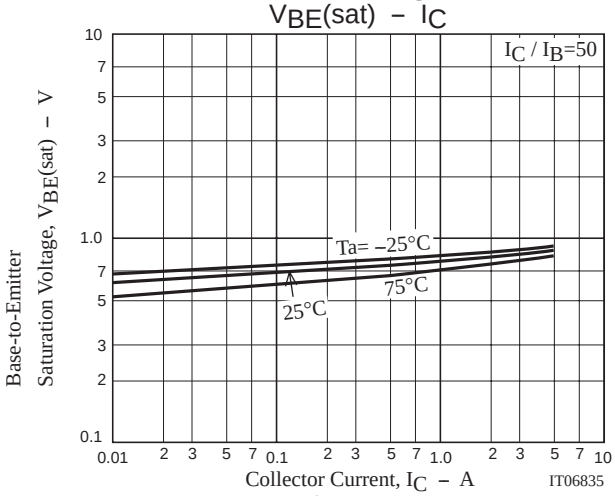
VCE(sat) – IC



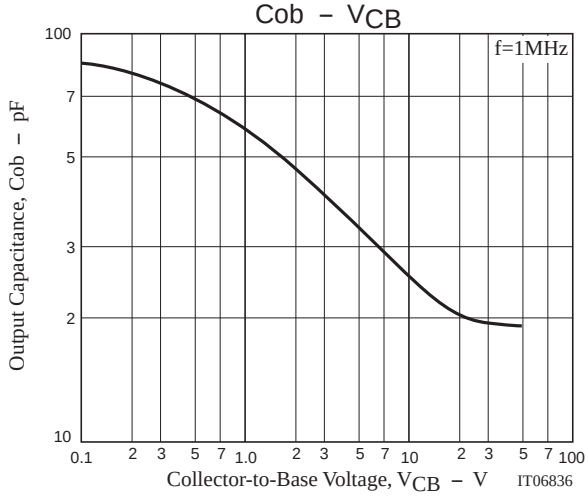
VCE(sat) – IC



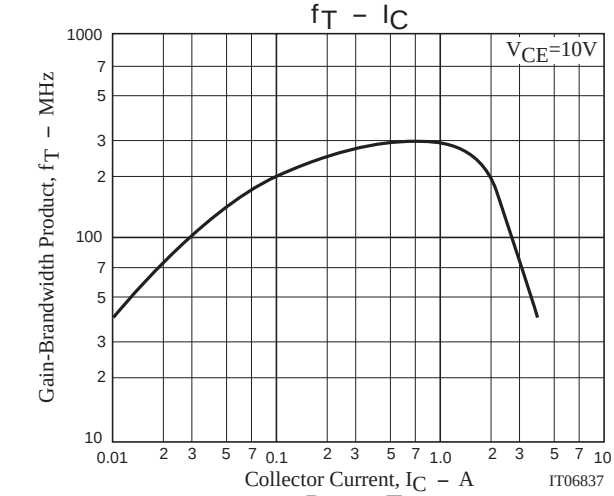
VBE(sat) – IC



Cob – VCB



fT – IC



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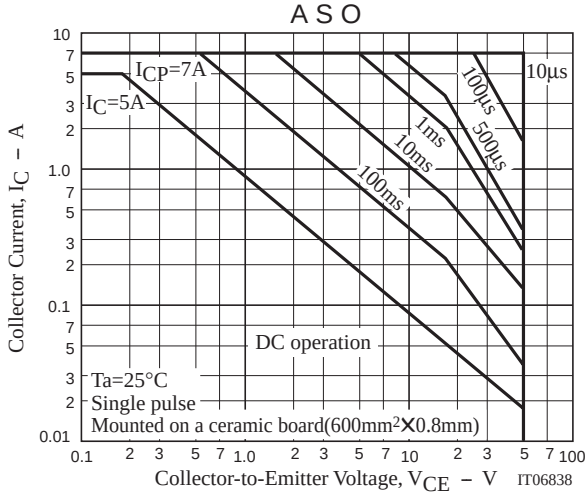
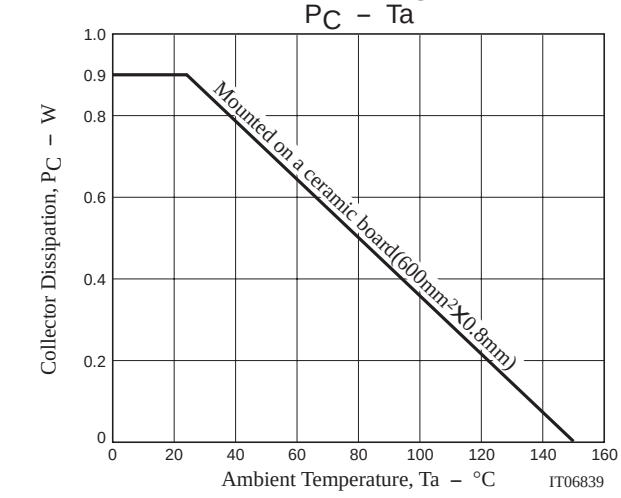


PC – Ta



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