



MCH6123 — PNP Epitaxial Planar Silicon Transistor

High-Current Switching Applications

Applications

- DC-DC converter, relay drivers, lamp drivers, motor drivers.

Features

- Adoption of MBIT process.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High speed switching.
- Ultrasmall-sized package permitting applied sets to be made small and slim (0.85mm).
- High allowable power dissipation.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		-50	V
Collector-to-Emitter Voltage	VCES		-50	V
Collector-to-Emitter Voltage	VCEO		-50	V
Emitter-to-Base Voltage	VEBO		-6	V
Collector Current	IC		-3	A
Collector Current (Pulse)	ICP		-6	A
Base Current	IB		-600	mA
Collector Dissipation	PC	When mounted on ceramic substrate (600mm ² ×0.8mm)	1	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Marking : AZ

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MCH6123

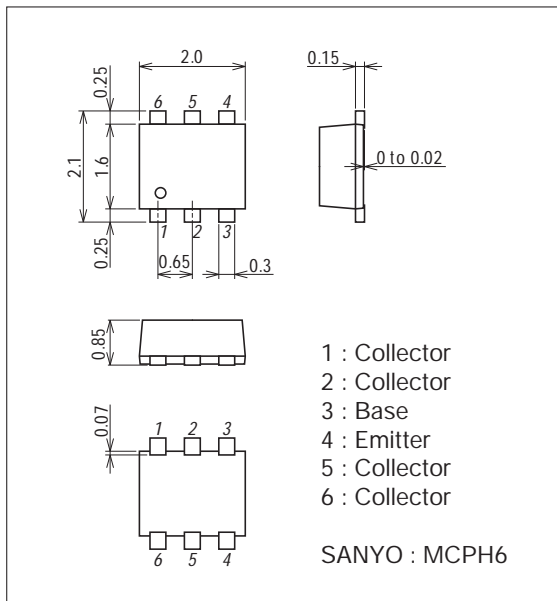
Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = -40\text{V}, I_E = 0\text{A}$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -4\text{V}, I_C = 0\text{A}$			-1	μA
DC Current Gain	h_{FE}	$V_{CE} = -2\text{V}, I_C = -100\text{mA}$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE} = -10\text{V}, I_C = -500\text{mA}$		390		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}, f = 1\text{MHz}$		24		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = -1\text{A}, I_B = -50\text{mA}$		-115	-230	mV
	$V_{CE(sat)2}$	$I_C = -2\text{A}, I_B = -100\text{mA}$		-240	-650	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -2\text{A}, I_B = -100\text{mA}$		-0.88	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0\text{A}$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = -100\mu\text{A}, R_{BE} = 0\Omega$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, R_{BE} = \infty$	-50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0\text{A}$	-6			V
Turn-On Time	t_{on}	See specified Test Circuit.		30		ns
Storage Time	t_{stg}	See specified Test Circuit.		230		ns
Fall Time	t_f	See specified Test Circuit.		18		ns

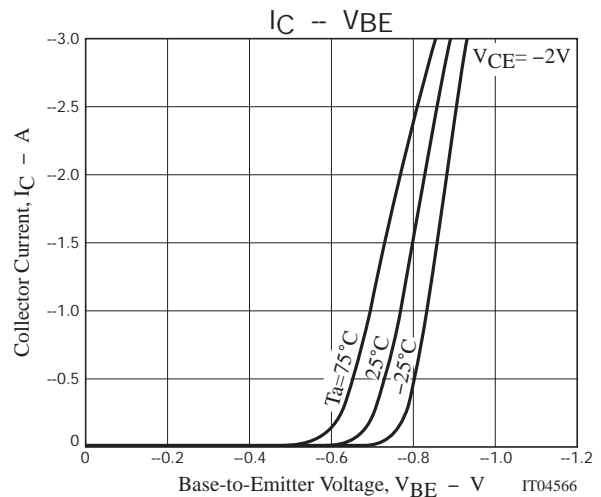
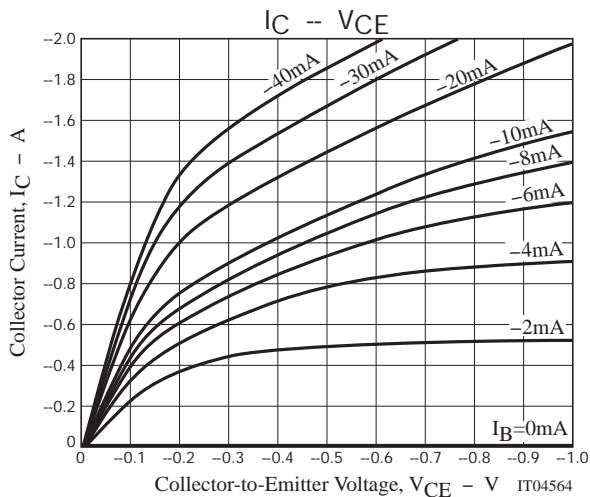
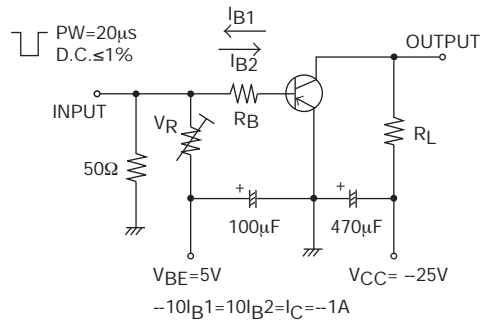
Package Dimensions

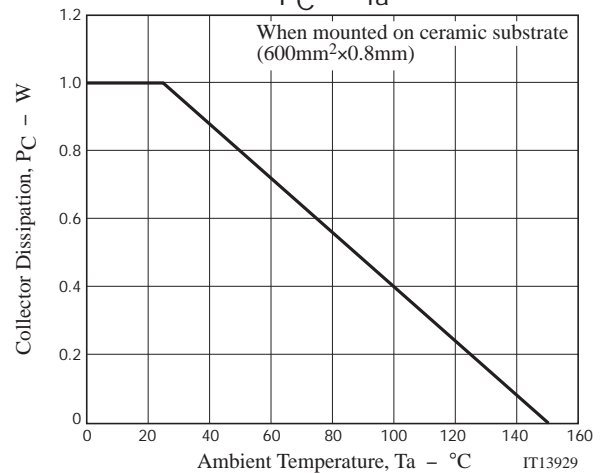
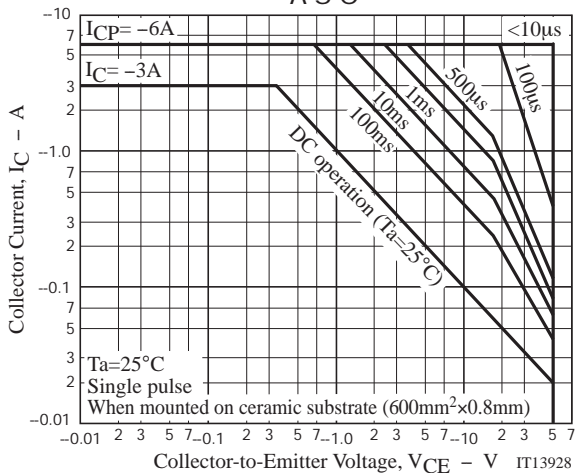
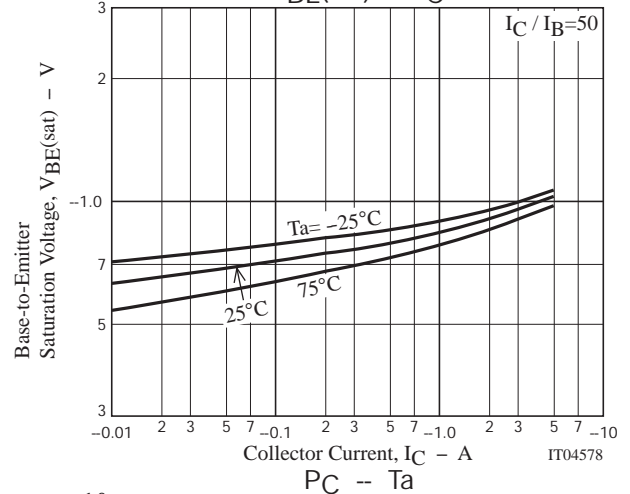
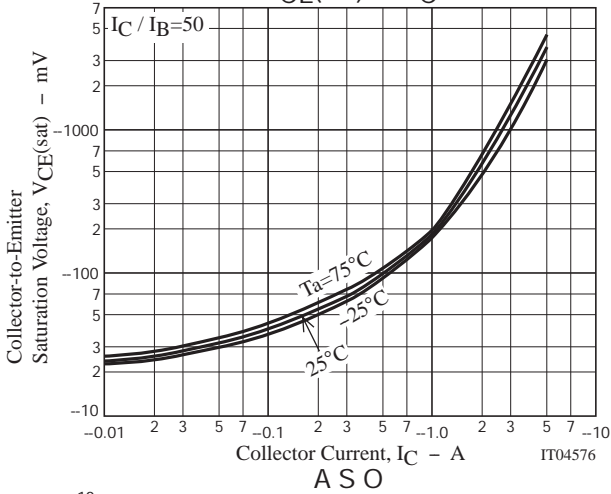
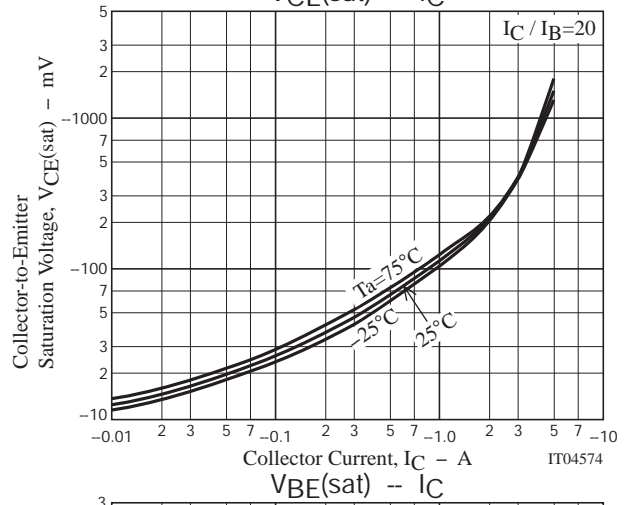
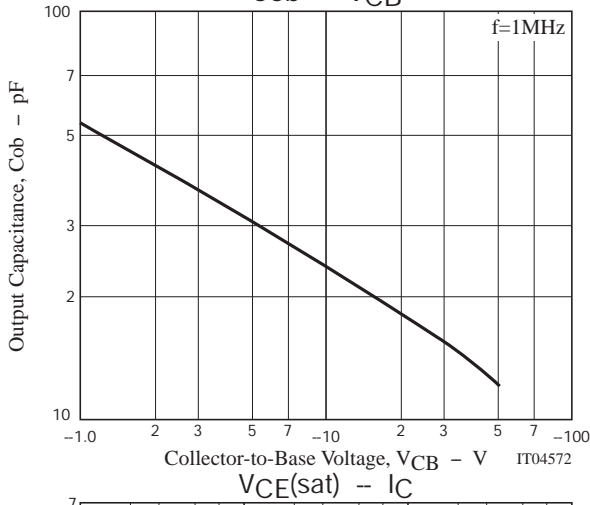
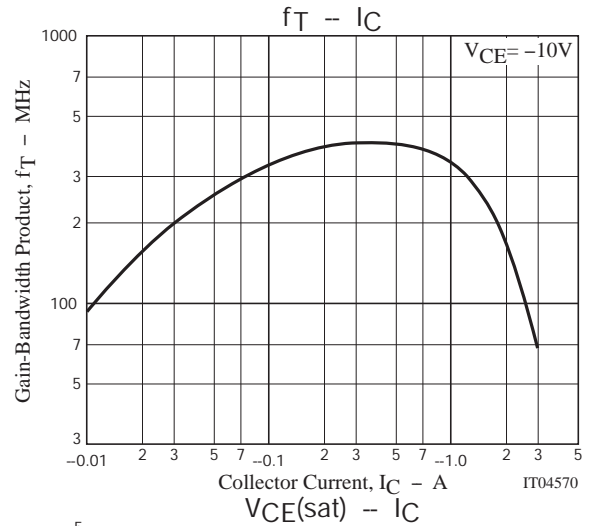
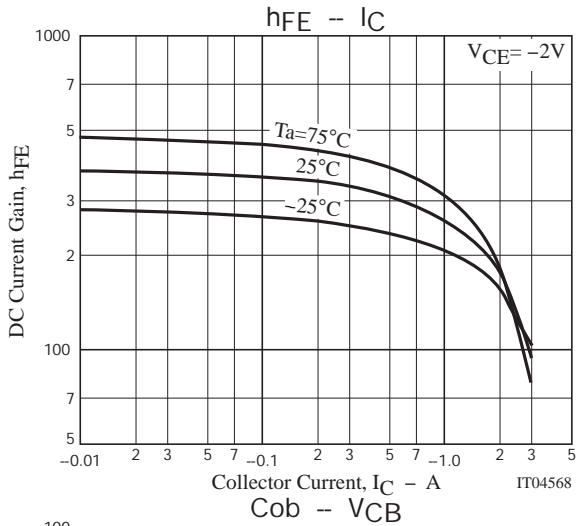
unit : mm (typ)

7022A-007



Switching Time Test Circuit





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