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MCH3106

Bipolar Transistor -12V, -3A, Low $V_{CE(sat)}$, PNP Single MCPH3

Applicaitions

- Relay drivers, lamp drivers, motor drivers, flash

Features

- Adoption of MBIT processes
- Low collector-to-emitter saturation voltage
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.85mm)
- High allowable power dissipation
- Large current capacity
- High-speed switching

Specifications

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

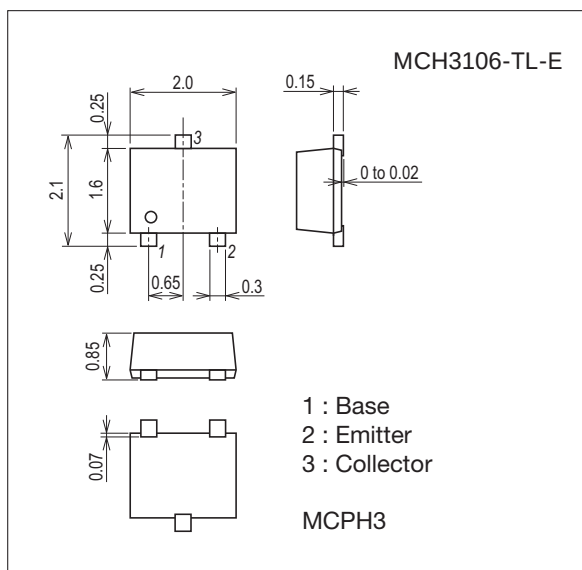
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-15	V
Collector-to-Emitter Voltage	V_{CEO}		-12	V
Emitter-to-Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-3	A
Collector Current (Pulse)	I_{CP}		-5	A
Base Current	I_B		-600	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (600mm ² ×0.8mm)	0.9	W
Junction Temperature	T_J		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

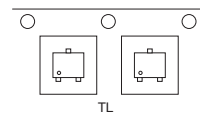
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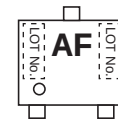
Product & Package Information

- Package : MCPH3
- JEITA, JEDEC : SC-70, SOT-323
- Minimum Packing Quantity : 3,000 pcs./reel

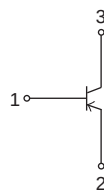
Packing Type : TL



Marking



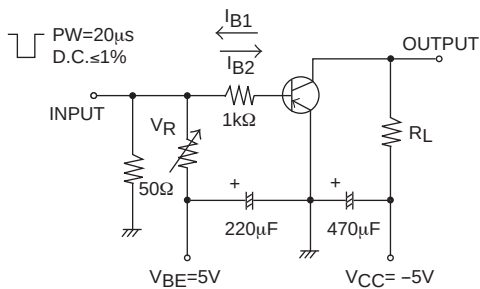
Electrical Connection



Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	VCB=-12V, IE=0A			-0.1	μA
Emitter Cutoff Current	IEBO	VEB=-4V, IC=0A			-0.1	μA
DC Current Gain	hFE	VCE=-2V, IC=-500mA	200		560	
Gain-Bandwidth Product	fT	VCE=-2V, IC=-500mA		280		MHz
Output Capacitance	Cob	VCB=-10V, f=1MHz		36		pF
Collector-to-Emitter Saturation Voltage	VCE(sat)	IC=-1.5A, IB=-30mA		-110	-165	mV
Base-to-Emitter Saturation Voltage	VBE(sat)	IC=-1.5A, IB=-30mA		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	IC=-10μA, IE=0A	-15			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	IC=-1mA, RBE=∞	-12			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	IE=-10μA, IC=0A	-5			V
Turn-On Time	ton	See specified Test Circuit.		30		ns
Storage Time	tstg			90		ns
Fall Time	tf			10		ns

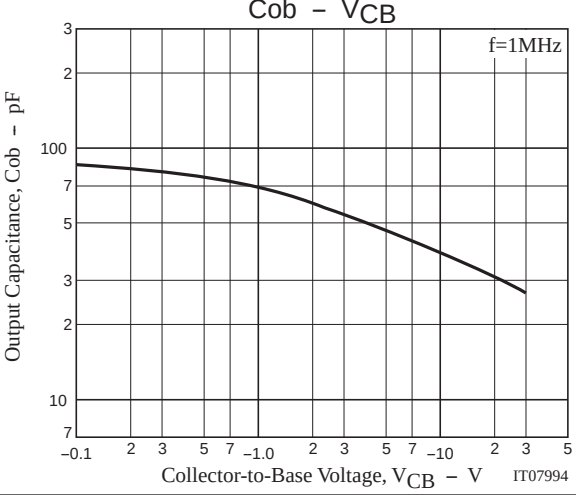
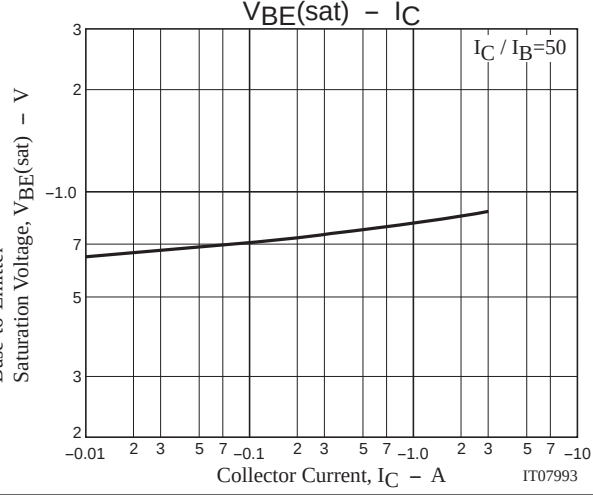
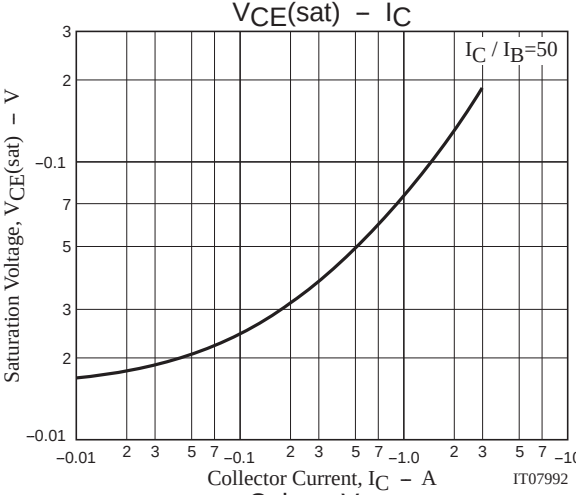
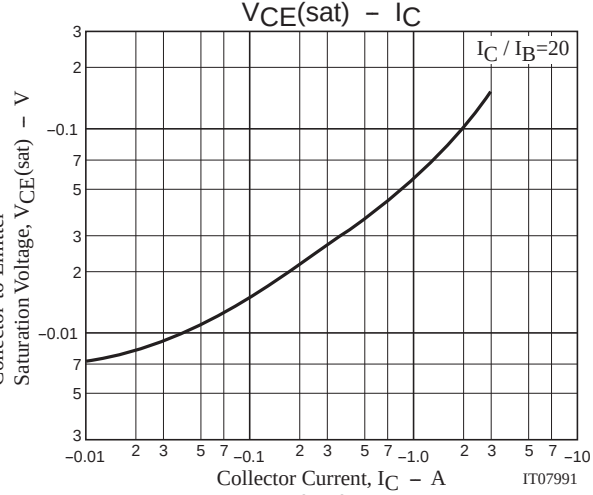
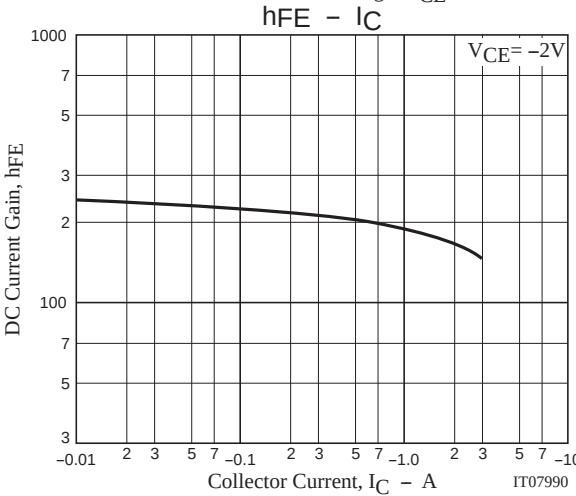
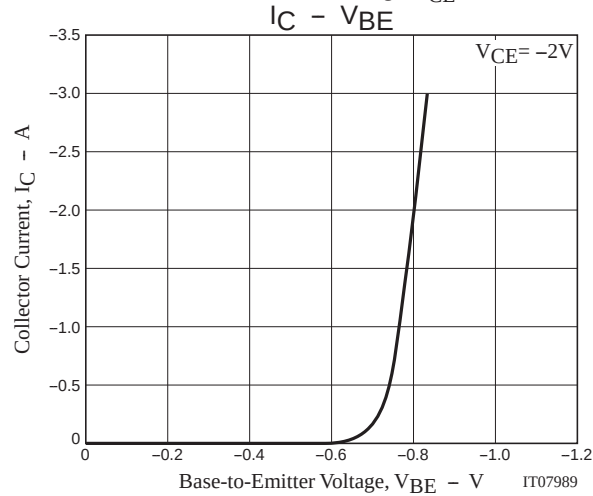
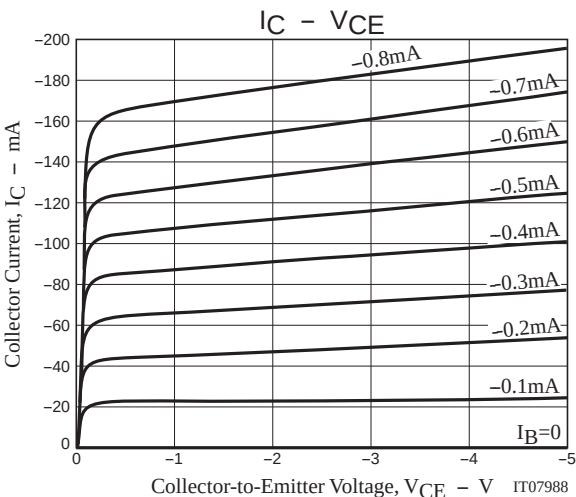
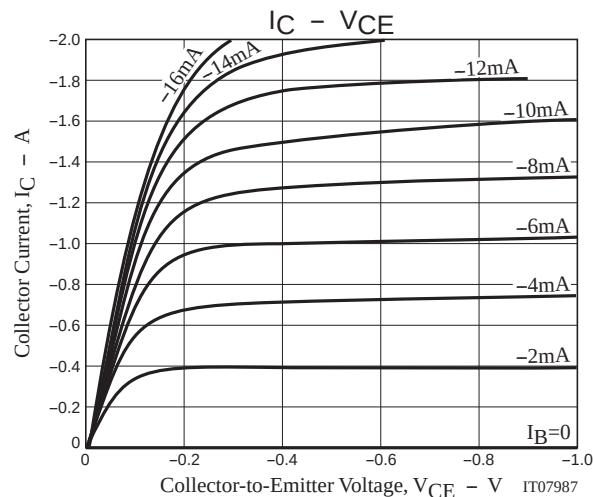
Switching Time Test Circuit

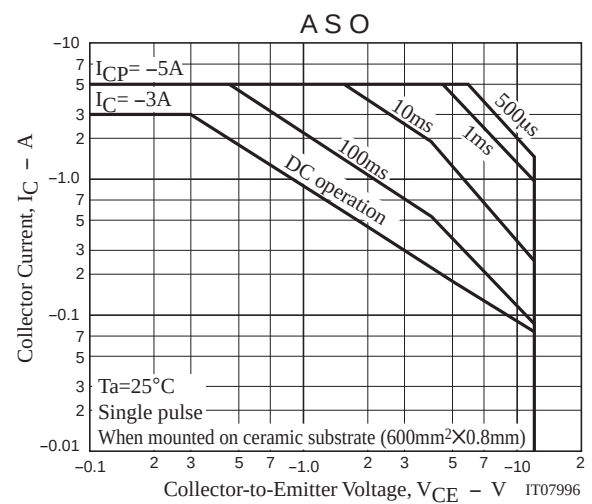
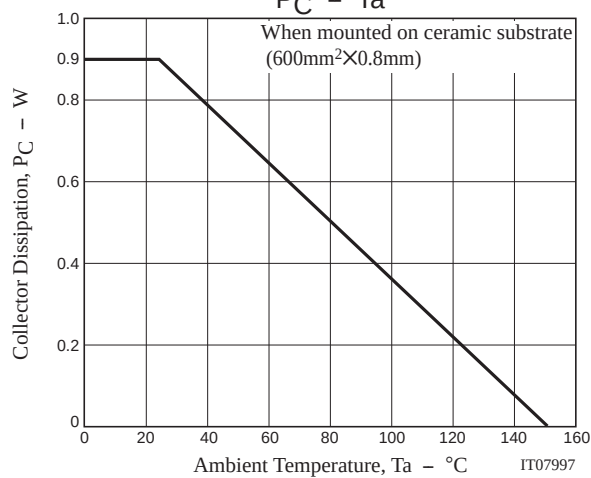
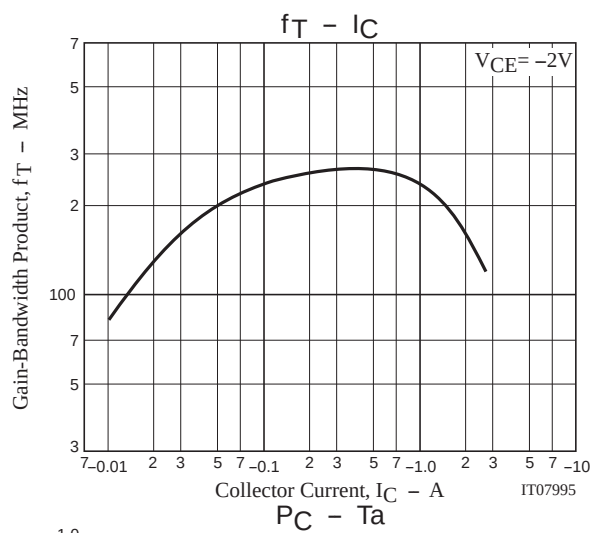


$I_C=20I_{B2}=-20I_{B1}=-1.5A$

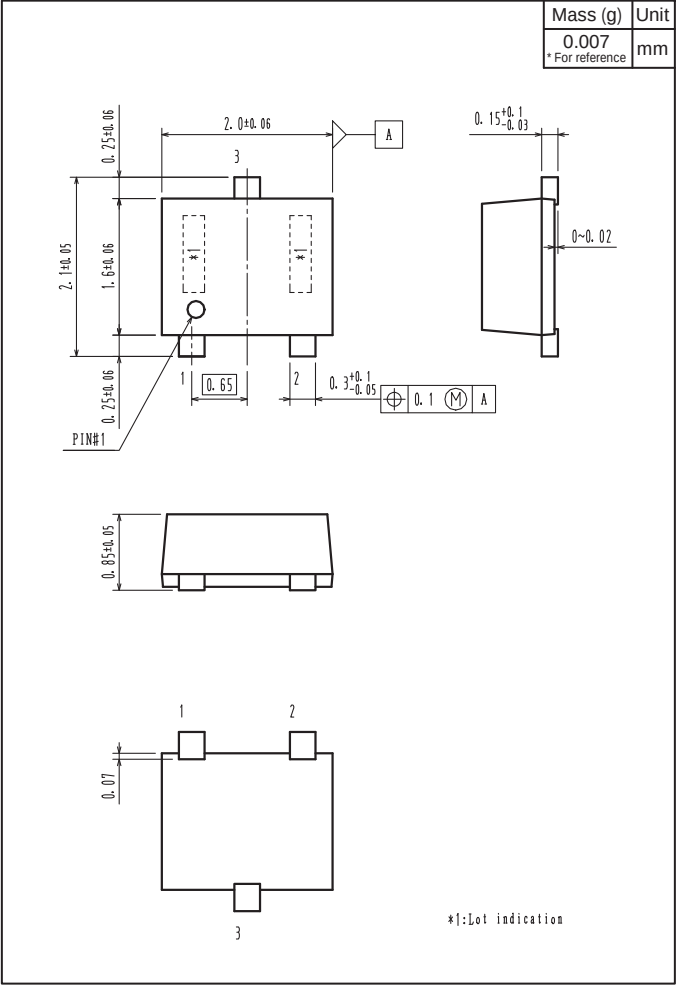
Ordering Information

Device	Package	Shipping	memo
MCH3106-TL-E	MCPH3	3,000pcs./reel	Pb Free

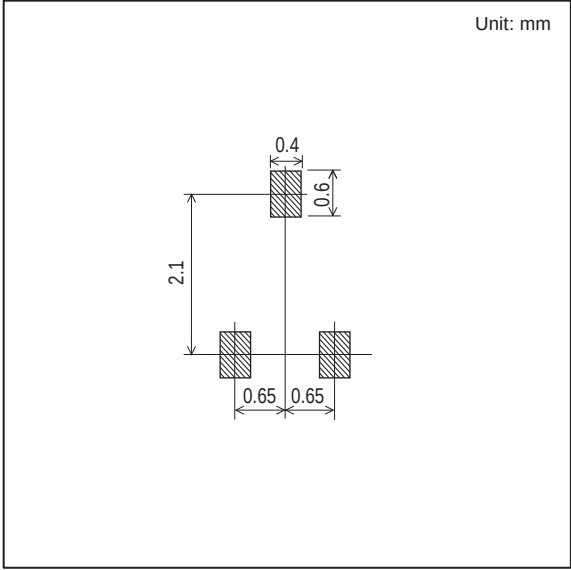




Outline Drawing
MCH3106-TL-E



Land Pattern Example



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