

PRELIMINARY

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Some parametric are subject to change.

INC5003AH1

SILICON NPN EPITAXIAL TYPE

FEATURE

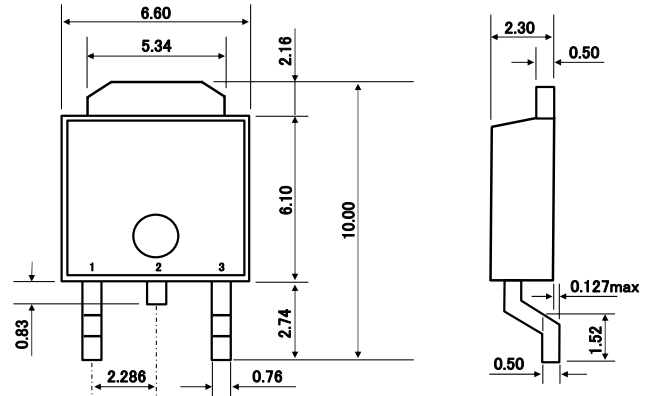
- Linearity of hFE is good
- Low voltage $V_{CE(sat)} = 250\text{mV(MAX)}$, $I_C=2\text{A}$
- Complementary INA5003AH1

APPLICATION

Motor drive, IGBT drive, DC/DC convertor

OUTLINE DRAWING

UNIT: mm



JEITA:SC-63

JEDEC:TO-252

TERMINAL CONNECTOR

(1) BASE

(2) COLLECTOR

(3) EMITTER

MAXIMUM RATING (Ta=25°C)

SYMBOL	PARAMETER	TEST CONDITIONS	RATING	UNIT
V_{CBO}	Collector to Base voltage	—	150	V
V_{CEO}	Collector to Emitter voltage	—	60	V
V_{EBO}	Emitter to Base voltage	—	6	V
I_C	Collector current	DC	6	A
I_{CP}	Collector current	Pulse(PW=<300us, Duty cycle=<10%)	10	A
P_C	Collector dissipation	Ta=25°C	1	W
		Tc=25°C	10	W
T_j	Junction temperature	—	+150	°C
T_{stg}	Storage temperature	—	-55~+150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
$V_{(BR)CBO}$	C to B break down voltage	$I_C=100\mu\text{A}$	150	—	—	V
$V_{(BR)CEO}$	C to E break down voltage	$I_C=10\text{mA}$	60	—	—	V
$V_{(BR)EBO}$	E to B break down voltage	$I_E=100\mu\text{A}$	6	—	—	V
I_{CBO}	Collector cut off current	$V_{CB}=120\text{V}$	—	—	1	μA
I_{EBO}	Emitter cut off current	$V_{EB}=6\text{V}$	—	—	1	μA
hFE1	DC forward current gain	$V_{CE}=1\text{V}$, $I_C=2\text{A}$	120	200	300	—
hFE2	DC forward current gain	$V_{CE}=1\text{V}$, $I_C=5\text{A}$	75	—	—	—
$V_{CE(sat)}$	C to E saturation voltage	$I_C=2\text{A}$, $I_B=100\text{mA}$	—	150	250	mV
		$I_C=6\text{A}$, $I_B=300\text{mA}$	—	450	600	mV
$V_{BE(sat)}$	B to E saturation voltage	$I_C=6\text{A}$, $I_B=300\text{mA}$	—	—	1.3	V
fT	Gain band width product	$V_{CE}=10\text{V}$, $I_E=-100\text{mA}$	—	120	—	MHz
Cob	Collector output capacitance	$V_{CB}=10\text{V}$, $I_E=0\text{A}$, $f=1\text{MHz}$	—	50	—	pF
ton	Turn on time	$I_C=3\text{A}$, $I_{B1}=-I_{B2}=0.15\text{A}$	—	—	0.3	μs
tstg	Storage time	$V_{CC}=30\text{V}$, $R_L=10\Omega$	—	—	1.5	μs
tf	Fall time	$V_{BB}=7.5\text{V}$	—	—	0.3	μs

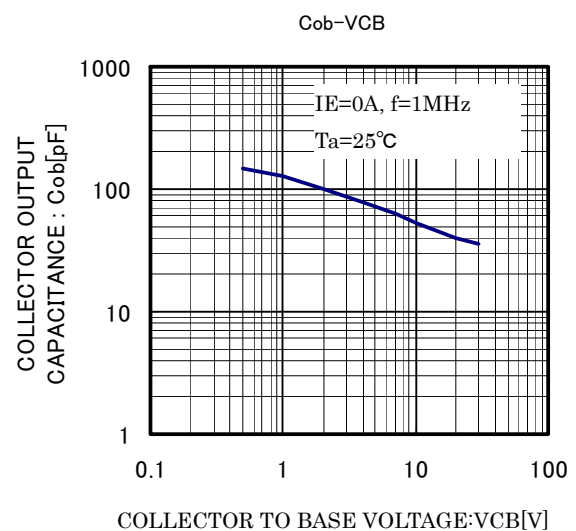
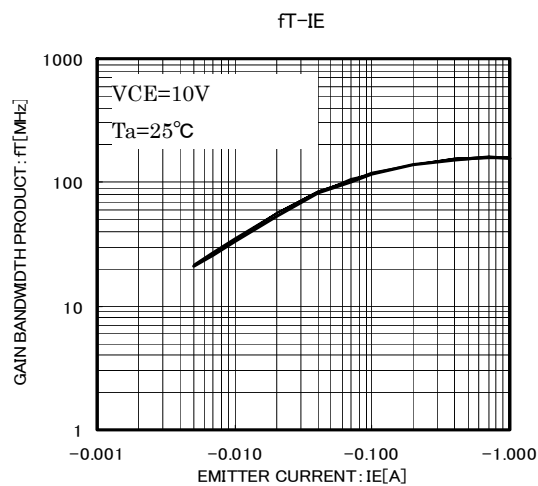
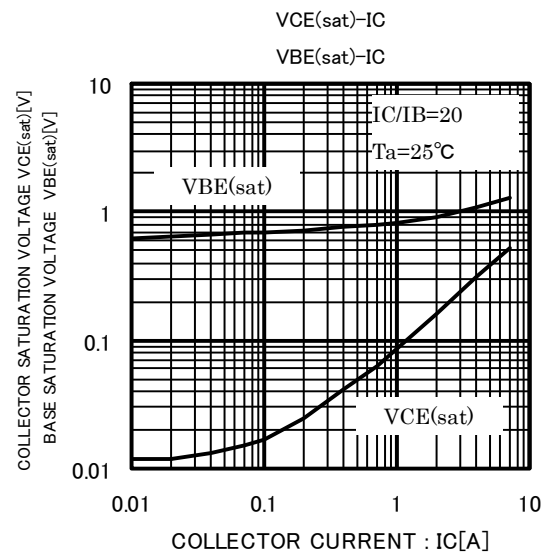
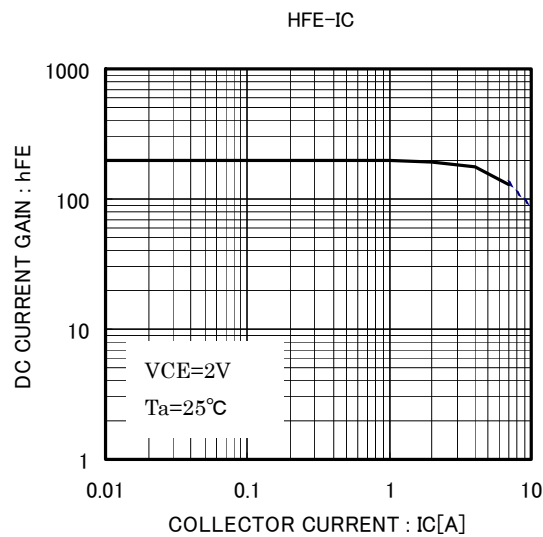
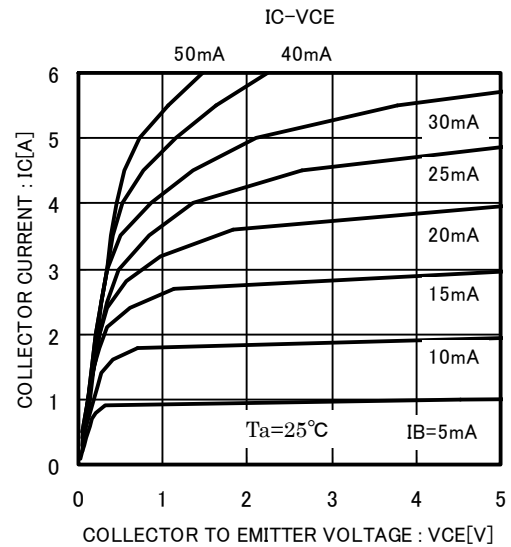
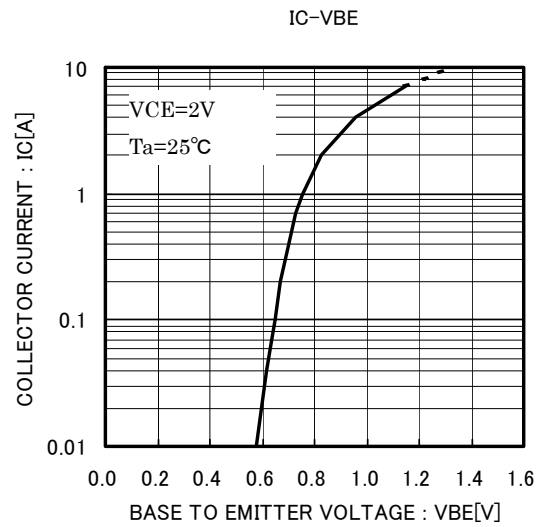
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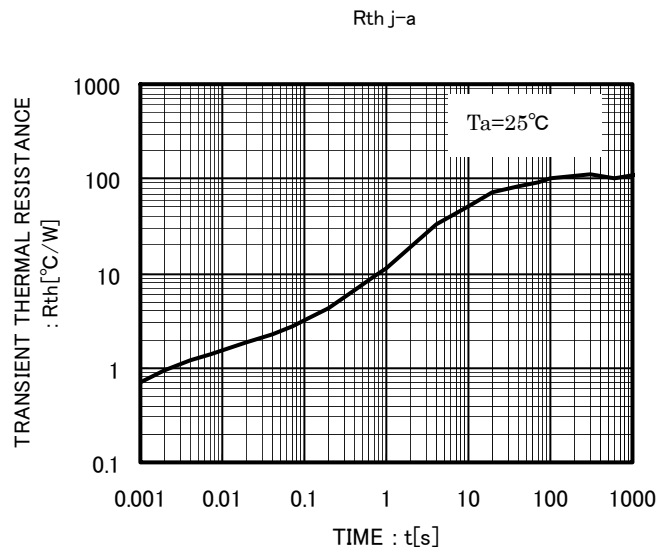
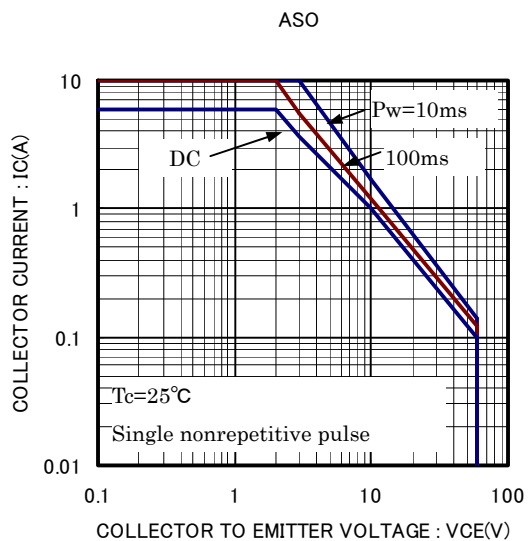
SILICON NPN EPITAXIAL TYPE

TYPICAL CHARACTERISTICS



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