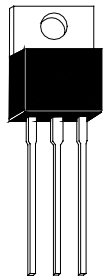
HMJE13005

NPN EPITAXIAL PLANAR TRANSISTOR



TO-220

Description

- Switch Regulators
- PWM Inverters and Motor Controls
- Solenoid and Relay Drivers
- Deflection Circuits

Absolute Maximum Ratings (Ta=25°C)

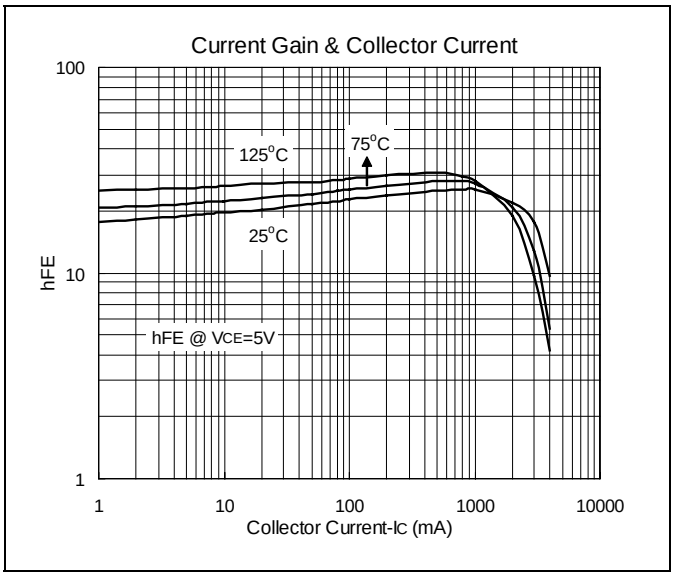
- Maximum Temperatures
  Storage Temperature ..... -50 ~ +150 °C
  Junction Temperature ..... 150 °C Maximum
- Maximum Power Dissipation
  Total Power Dissipation (Tc=25°C) ..... 75 W
- Maximum Voltages and Currents (Ta=25°C)
  VCEX Collector to Emitter Voltage ..... 700 V
  VCEO Collector to Emitter Voltage ..... 400 V
  VEBO Emitter to Base Voltage ..... 9 V
  IC Collector Current (Continuous) ..... 4 A
  IB Base Current (Continuous) ..... 2 A

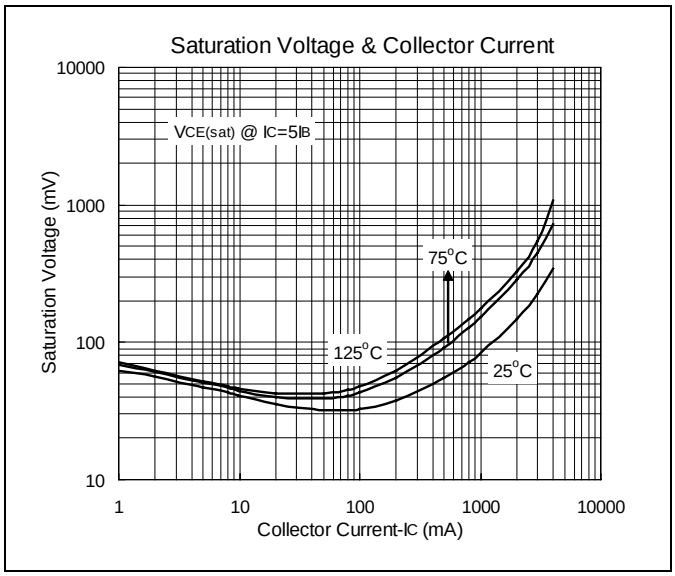
Characteristics (Ta=25°C)

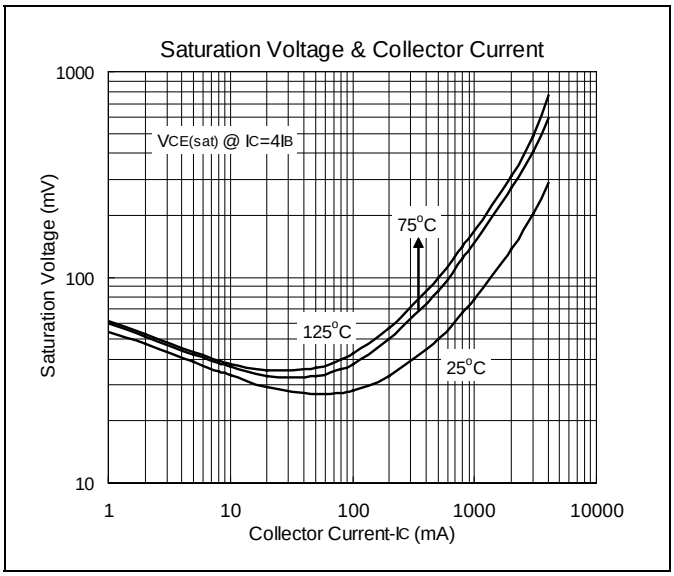
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BVCEX	700	-	-	V	IC=1mA, VBE(off)=1.5V
BVCEO	400	-	-	V	IC=10mA
IEBO	-	-	1	mA	VEB=9V
ICEX	-	-	1	mA	VCE=700V, VBE(off)=1.5V
*VCE(sat)1	-	-	500	mV	IC=1A, IB=200mA
*VCE(sat)2	-	-	0.6	V	IC=2A, IB=500mA
*VCE(sat)3	-	-	1	V	IC=4A, IB=1A
*VBE(sat)	-	-	1.2	V	IC=1A, IB=200mA
*VBE(sat)	-	-	1.6	V	IC=2A, IB=500mA
*hFE1	10	-	60		IC=0.5A, VCE=5V
*hFE2	10	-	60		IC=1A, VCE=5V
*hFE3	8	-	40		IC=2A, VCE=5V
Ton	-	0.6	0.8	uS	VCC=125V, IC=2A, IB1=IB2=0.4A
ts	-	2.9	4	uS	VCC=125V, IC=2A, IB1=IB2=0.4A
tf	-	0.25	0.9	uS	VCC=125V, IC=2A, IB1=IB2=0.4A

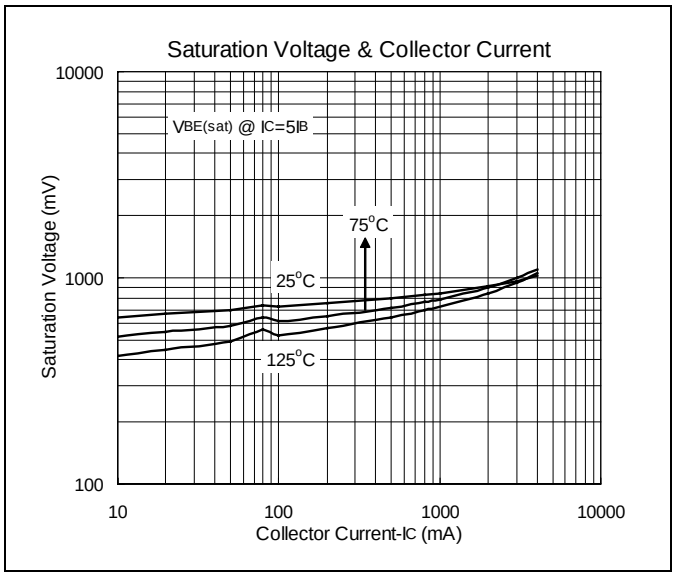
*Pulse Test: Pulse Width ≤380us, Duty Cycle≤2%

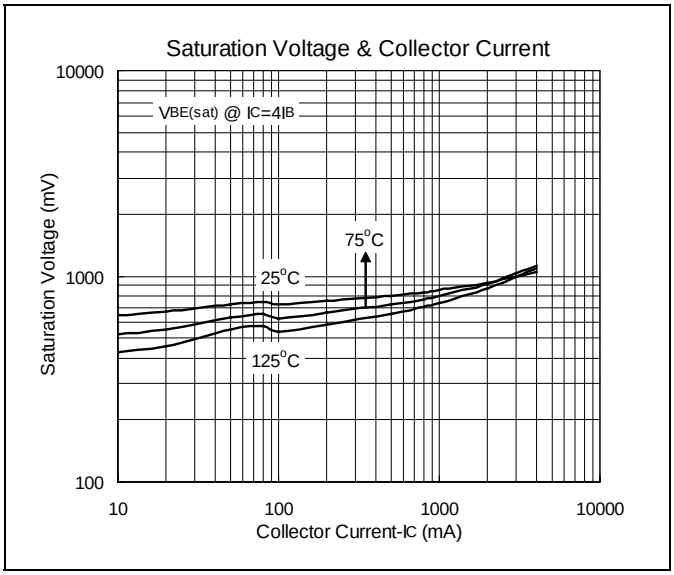
Characteristics Curve

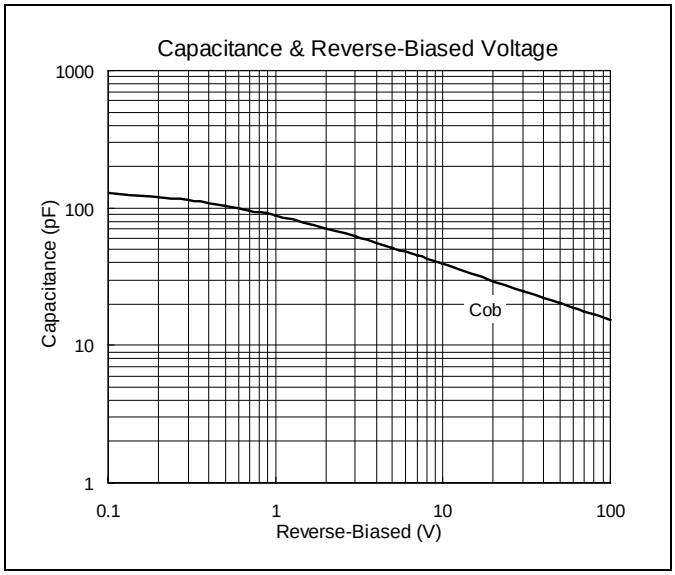


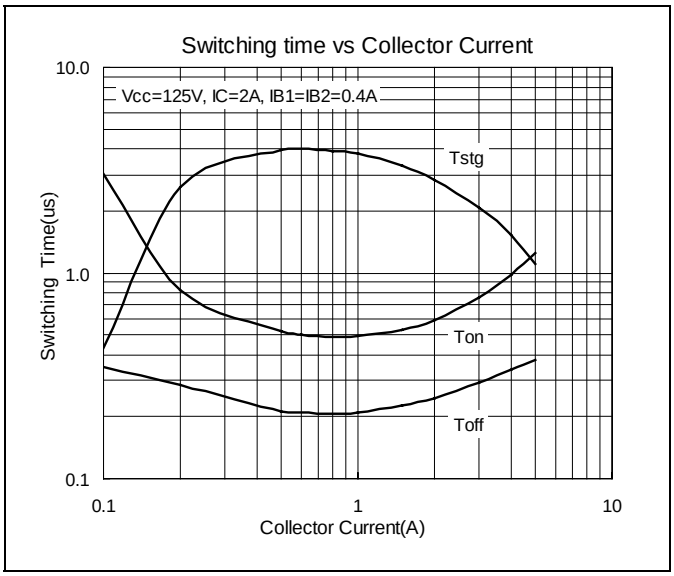


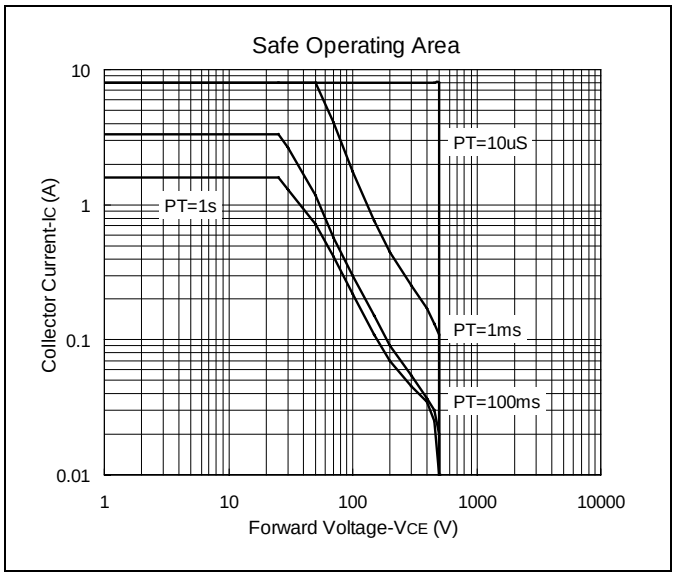




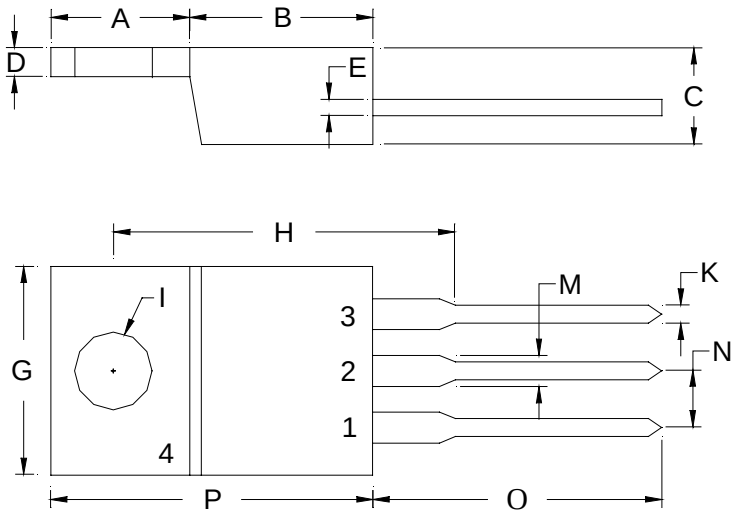




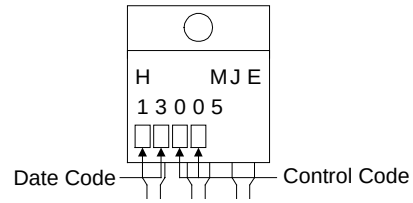

Switching time vs Collector Current
Vcc=125V, IC=2A, IB1=IB2=0.4A
Tstg
Ton
Toff
Switching Time(us)
10.0
1.0
0.1
0.1
1
10
Collector Current(A)


Safe Operating Area
PT=10uS
PT=1s
PT=1ms
PT=100ms
Collector Current-Ic (A)
10
1
0.1
0.01
1
10
100
1000
10000
Forward Voltage-VCE (V)

TO-220AB Dimension



Marking:



Style: Pin 1.Base 2.Collector 3.Emitter

3-Lead TO-220AB Plastic Package
HSMC Package Code: E

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.2197	0.2949	5.58	7.49	I	-	*0.1508	-	*3.83
B	0.3299	0.3504	8.38	8.90	K	0.0295	0.0374	0.75	0.95
C	0.1732	0.185	4.40	4.70	M	0.0449	0.0551	1.14	1.40
D	0.0453	0.0547	1.15	1.39	N	-	*0.1000	-	*2.54
E	0.0138	0.0236	0.35	0.60	O	0.5000	0.5618	12.70	14.27
G	0.3803	0.4047	9.66	10.28	P	0.5701	0.6248	14.48	15.87
H	-	*0.6398	-	*16.25					

Notes: 1.Dimension and tolerance based on our Spec. dated Sep. 07,1997.
2.Controlling dimension: millimeters.
3.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
4.If there is any question with packing specification or packing method, please contact your local HSMC sales office.

Material:

- Lead: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

Head Office And Factory:

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- **Factory 1:** No. 38, Kuang Fu S. Rd., Fu-Kou Hsin-Chu Industrial Park Hsin-Chu Taiwan. R.O.C
  Tel: 886-3-5983621~5 Fax: 886-3-5982931