

## NPN SILICON POWER TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- LOW COLLECTOR-EMITTER SATURATION VOLTAGE
- FAST SWITCHING SPEED

### APPLICATIONS

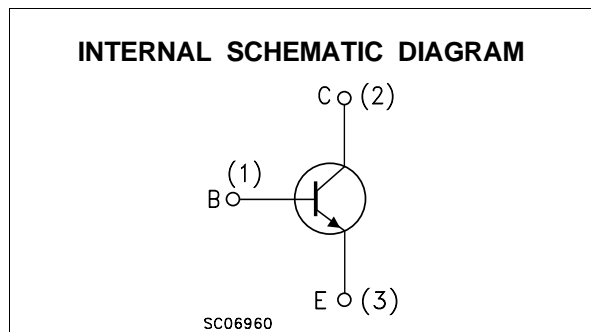
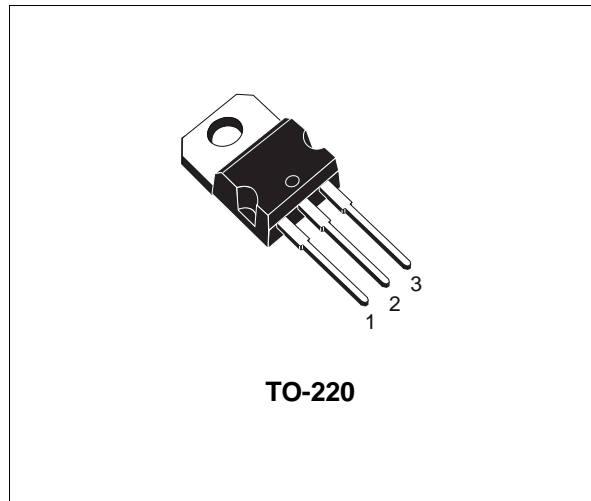
- GENERAL PURPOSE SWITCHING
- GENERAL PURPOSE AMPLIFIER

### DESCRIPTION

The D44H8, and D44H11 are silicon Multiepitaxial Planar NPN transistors mounted in Jedec TO-220 plastic package.

They are intended for various switching and general purpose applications.

D44H8, D44H11 are complementary with D45H8, D45H11.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		D44H8	D44H11	
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	60	80	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	5		V
$I_C$	Collector Current	10		A
$I_{CM}$	Collector Peak Current	20		A
$P_{tot}$	Total Dissipation at $T_c \leq 25^\circ\text{C}$	50		W
$T_{stg}$	Storage Temperature	-65 to 150		$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	150		$^\circ\text{C}$

# D44H8/D44H11

## THERMAL DATA

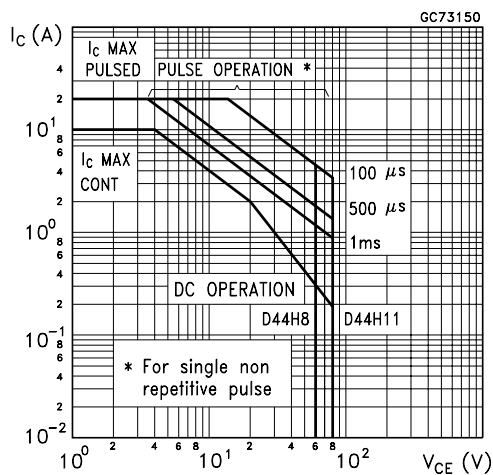
$R_{thj-case}$	Thermal Resistance Junction-case	Max	2.5	$^{\circ}C/W$
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## ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$ unless otherwise specified)

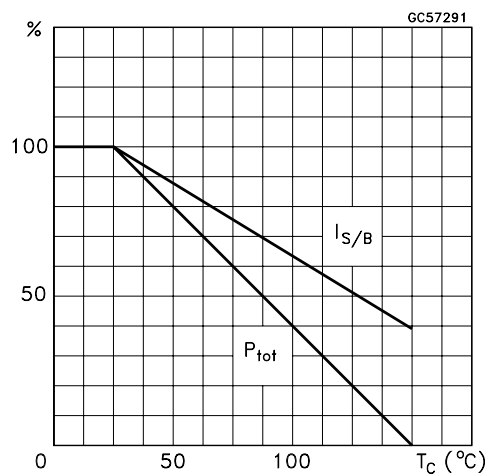
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cut-off Current ( $I_E = 0$ )	$V_{CB} = \text{rated } V_{CEO}$			10	$\mu A$
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 5V$			100	$\mu A$
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage	$I_C = 100 \text{ mA}$ for <b>D44H8</b> for <b>D44H11</b>	60 80			V V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 8 \text{ A}$ $I_B = 0.4 \text{ A}$			1	V
$V_{BE(sat)}^*$	Base-Emitter Saturation Voltage	$I_C = 8 \text{ A}$ $I_B = 0.8 \text{ A}$			1.5	V
$h_{FE}^*$	DC Current Gain	$I_C = 2 \text{ A}$ $V_{CE} = 1 \text{ V}$ $I_C = 4 \text{ A}$ $V_{CE} = 1 \text{ V}$	60 40			

\* Pulsed: Pulse duration = 300  $\mu s$ , duty cycle  $\leq 2\%$

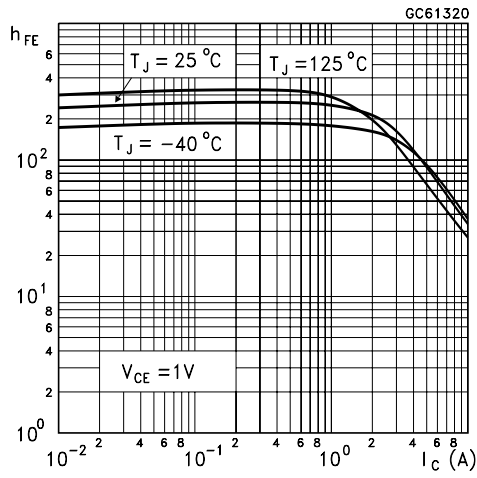
## Safe Operating Area



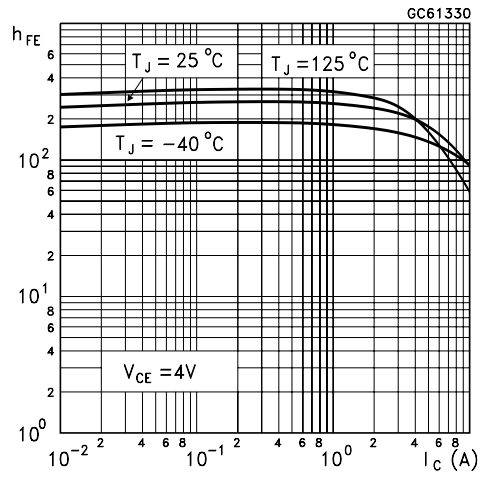
## Derating Curves



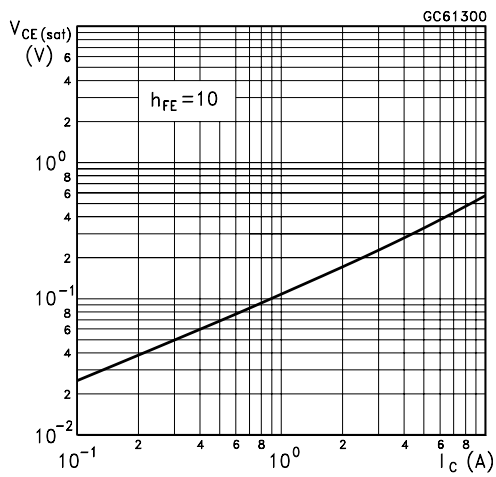
DC Current Gain



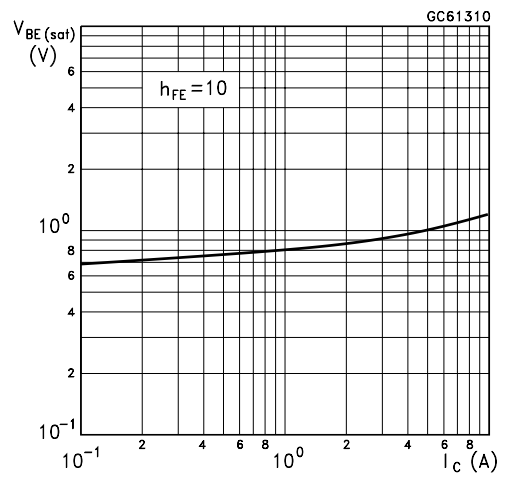
DC Current Gain



Collector-Emitter Saturation Voltage

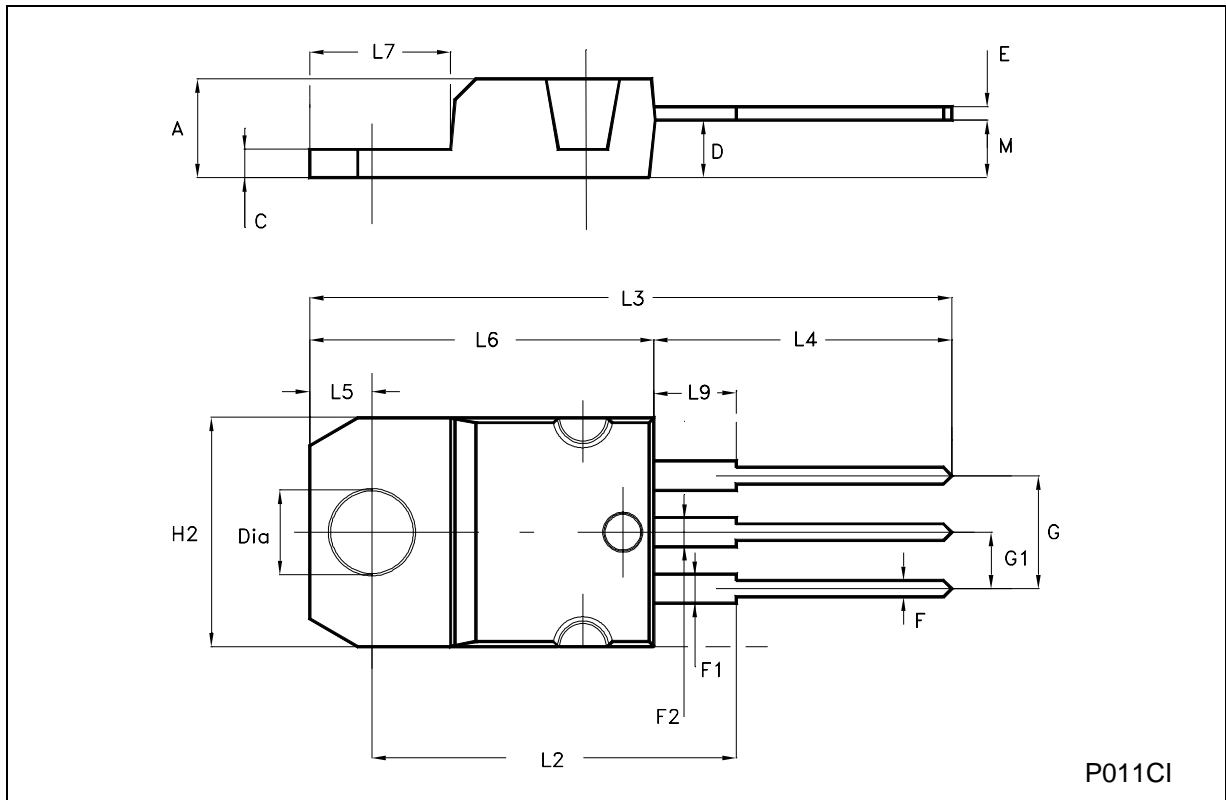


Base-Emitter Saturation Voltage



**TO-220 MECHANICAL DATA**

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.052
D	2.40		2.72	0.094		0.107
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.202
G1	2.40		2.70	0.094		0.106
H2	10.00		10.40	0.394		0.409
L2		16.40			0.645	
L4	13.00		14.00	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.20		6.60	0.244		0.260
L9	3.50		3.93	0.137		0.154
M		2.60			0.102	
DIA.	3.75		3.85	0.147		0.151



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