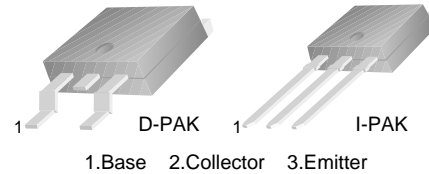


# MJD44H11

## NPN Epitaxial Silicon Transistor

- General Purpose Power and Switching Such as Output or Driver Stages in Applications
- D-PAK for Surface Mount Applications
- Lead Formed for Surface Mount Application (No Suffix)
- Straight Lead (I-PAK, "- I" Suffix)
- Electrically Similar to Popular MJE44H
- Fast Switching Speeds
- Low Collector Emitter Saturation Voltage



### Absolute Maximum Ratings $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CEO}$	Collector-Emitter Voltage	80	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current (DC)	8	A
$I_{CP}$	Collector-Current (Pulse)	16	A
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$

### Thermal Characteristics $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Max.	Units
$P_D$	Total Device Dissipation	$T_c = 25^\circ\text{C}$	20
		$T_a = 25^\circ\text{C}$	1.75
$R_{\theta JC}$	Thermal Resistance, Junction to Case	6.25	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	71.4	$^\circ\text{C/W}$

**Electrical Characteristics**  $T_a = 25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$V_{CEO(sus)}$	*Collector-Emitter Sustaining Voltage	$I_C = 30\text{mA}, I_B = 0$	80			V
$I_{CEO}$	Collector Cut-off Current	$V_{CE} = 80\text{V}, I_B = 0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{BE} = 5\text{V}, I_C = 0$			50	$\mu\text{A}$
$h_{FE}$	*DC Current Gain	$V_{CE} = 1\text{V}, I_C = 2\text{A}$ $V_{CE} = 1\text{V}, I_C = 4\text{A}$	60 40			
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage	$I_C = 8\text{A}, I_B = 0.4\text{A}$			1	V
$V_{BE(on)}$	*Base-Emitter On Voltage	$I_C = 8\text{A}, I_B = 0.8\text{A}$			1.5	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 0.5\text{A}$		50		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		130		pF
$t_{ON}$	Turn On Time	$I_C = 5\text{A}$ $I_{B1} = - I_{B2} = 0.5\text{A}$		300		ns
$t_{STG}$	Storage Time			500		ns
$t_F$	Fall Time			140		ns

\* Pulse Test:  $PW \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

## Typical Performance Characteristics

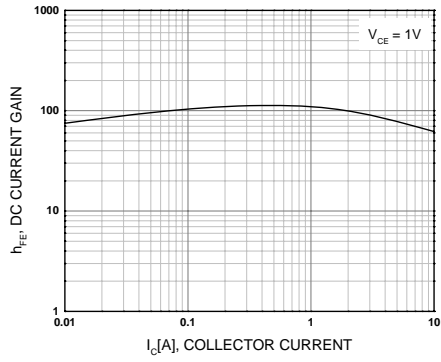


Figure 1. DC current Gain

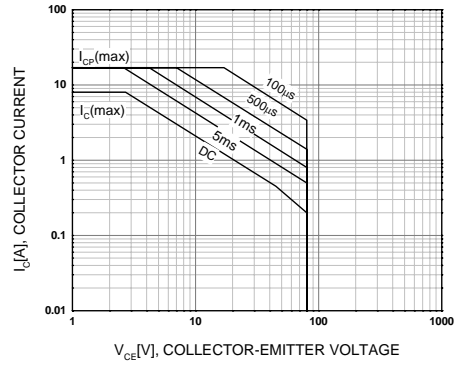


Figure 2. Safe Operating Area

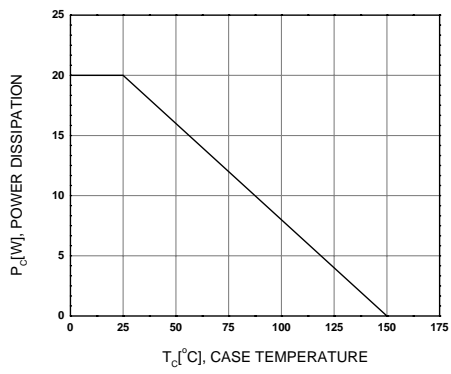





Figure 3. Power Derating





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