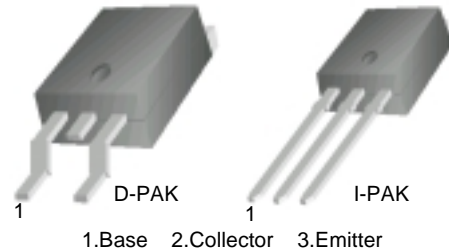


MJD31/31C

General Purpose Amplifier Low Speed Switching Applications

- Load Formed for Surface Mount Application (No Suffix)
- Straight Lead (I.ACK, "- I" Suffix)
- Electrically Similar to Popular TIP31 and TIP31C



NPN Epitaxial Silicon Transistor

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

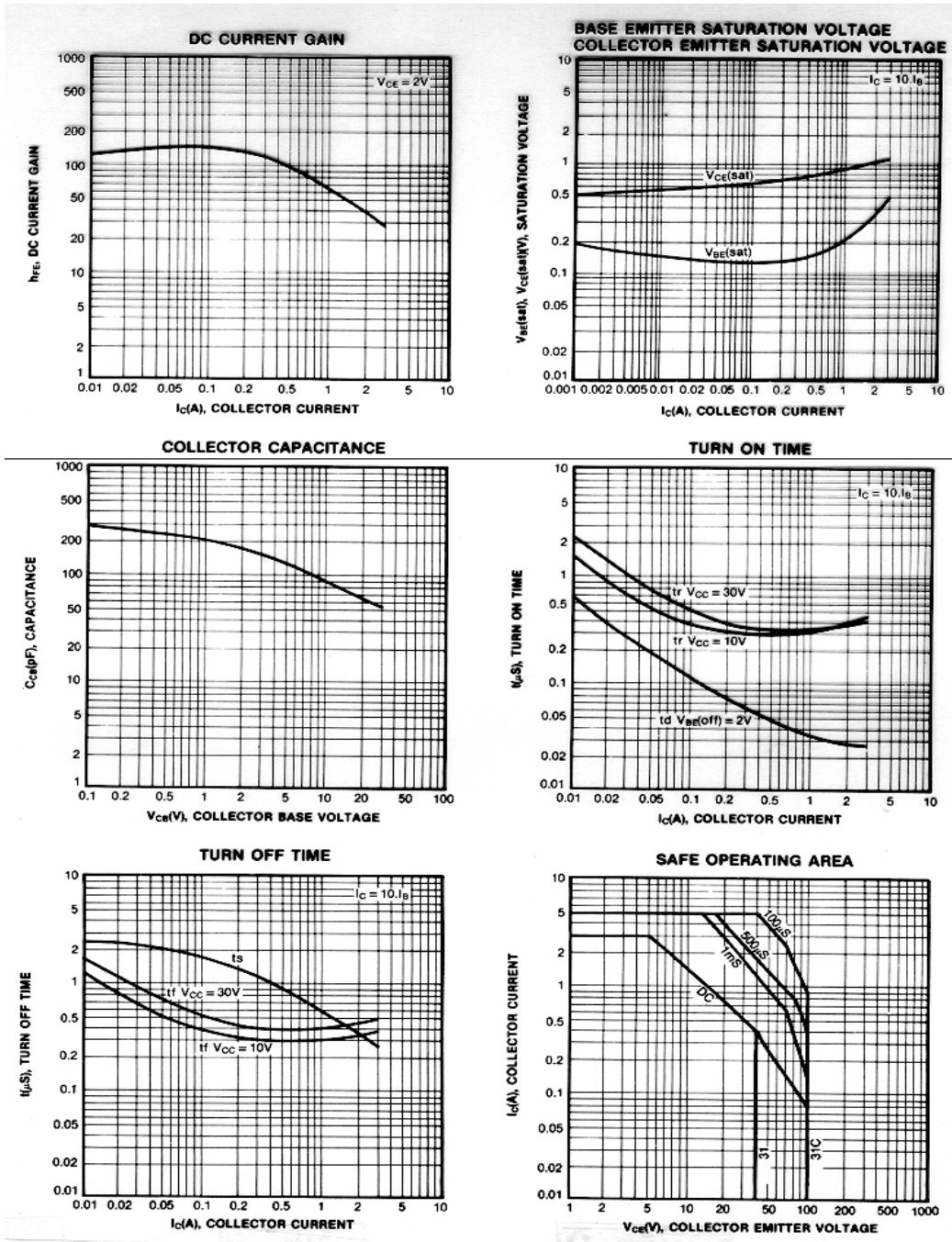
Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : MJD31 : MJD31C	40	V
		100	V
V_{CEO}	Collector-Emitter Voltage : MJD31 : MJD31C	40	V
		100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current (DC)	3	A
I_{CP}	Collector Current (Pulse)	1	A
I_B	Base Current	1	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	15	W
P_C	Collector Dissipation ($T_a=25^\circ\text{C}$)	1.56	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$

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

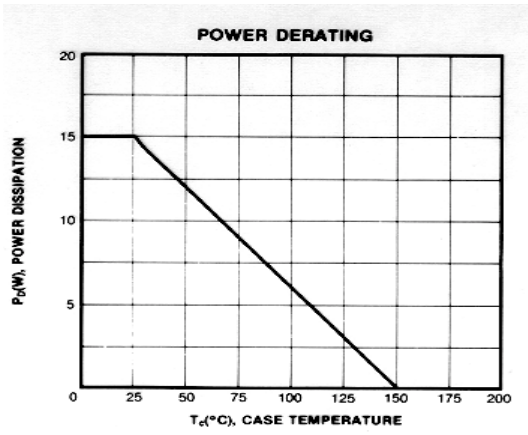
Symbol	Parameter	Test Condition	Min.	Max.	Units
$V_{CEO(sus)}$	* Collector-Emitter Sustaining Voltage : MJD31 : MJD31C	$I_C = 30\text{mA}, I_B = 0$	40		V
			100		V
I_{CEO}	Collector Cut-off Current : MJD31 : MJD31C	$V_{CE} = 40\text{V}, I_B = 0$ $V_{CE} = 60\text{V}, I_B = 0$		50	μA
				50	μA
I_{CES}	Collector Cut-off Current : MJD31 : MJD31C	$V_{CE} = 40\text{V}, V_{BE} = 0$ $V_{CE} = 100\text{V}, V_{BE} = 0$		20	μA
				20	μA
I_{EBO}	Emitter Cut-off Current	$V_{BE} = 5\text{V}, I_C = 0$		1	mA
h_{FE}	* DC Current Gain	$V_{CE} = 4\text{V}, I_C = 1\text{A}$ $V_{CE} = 4\text{V}, I_C = 3\text{A}$	25 10	50	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = 3\text{A}, I_B = 375\text{mA}$		1.2	V
$V_{BE(on)}$	* Base-Emitter ON Voltage	$V_{CE} = 4\text{A}, I_C = 3\text{A}$		1.8	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 500\text{mA}$	3		MHz

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

Typical Characteristics



Typical Characteristics (continued)



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FACT Quiet Series™	QS™	
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HiSeC™	SuperSOT™-8	

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