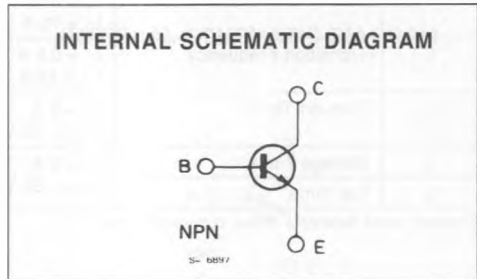
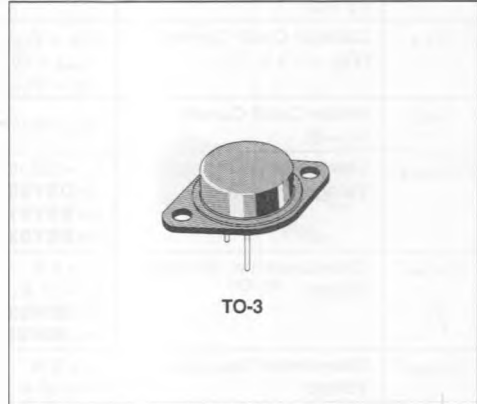


## HIGH CURRENT, HIGH SPEED TRANSISTORS

### DESCRIPTION

The BDY90, BDY91, BDY92 are silicon multi-epitaxial planar NPN transistors in Jedec TO-3 metal case intended for use in switching and linear applications in military and industrial equipment.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value			Unit
		BDY90	BDY91	BDY92	
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	120	100	80	V
$V_{CEV}$	Collector-emitter Voltage ( $V_{BE} = -1.5$ V)	120	100	80	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	100	80	60	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	6			V
$I_C$	Collector Current	10			A
$I_{CM}$	Collector Peak Current	15			A
$I_B$	Base Current	2			A
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 25$ °C	60			W
$T_{stg}$	Storage Temperature	- 65 to 175			°C
$T_j$	Junction Temperature	175			°C

**THERMAL DATA**

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	2.5	°C/W
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**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25\text{ °C}$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cutoff Current ( $I_E = 0$ )	$V_{CE} = V_{CBO}$			1	mA
$I_{CEV}$	Collector Cutoff Current ( $V_{BE} = -1.5\text{ V}$ )	$V_{CE} = V_{CEV}$ $T_{case} = 150\text{ °C}$ $V_{CE} = V_{CEV}$			1 3	mA mA
$I_{EBO}$	Emitter Cutoff Current ( $I_C = 0$ )	$V_{EB} = 6\text{ V}$			1	mA
$V_{CEO(sus)}^*$	Collector-emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 100\text{ mA}$ for <b>BDY90</b> for <b>BDY91</b> for <b>BDY92</b>	120 100 80			V V V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 5\text{ A}$ $I_B = 0.5\text{ A}$ $I_C = 10\text{ A}$ $I_B = 1\text{ A}$ for <b>BDY90, BDY91</b> for <b>BDY92</b>			0.5 1.5 1	V V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 5\text{ A}$ $I_B = 0.5\text{ A}$ $I_C = 10\text{ A}$ $I_B = 1\text{ A}$			1.2 1.5	V V
$h_{FE}^*$	DC current Gain	$I_C = 1\text{ A}$ $V_{CE} = 2\text{ V}$ $I_C = 5\text{ A}$ $V_{CE} = 5\text{ V}$ $I_C = 10\text{ A}$ $V_{CE} = 5\text{ V}$	30 30 20		120	
$f_t$	Transition Frequency	$I_C = 0.5\text{ A}$ $V_{CE} = 5\text{ V}$ $f = 5\text{ MHz}$		70		MHz
$t_{on}$	Turn-on Time	$I_C = 5\text{ A}$ $I_{B1} = 0.5\text{ A}$ $V_{CC} = 30\text{ V}$			0.35	µs
$t_s$	Storage Time	$I_C = 5\text{ A}$ $I_{B1} = -I_{B2} = 0.5\text{ A}$ $V_{CC} = 30\text{ V}$			1.3	µs
$t_f$	Fall Time				0.2	µs

\* Pulsed : pulse duration = 300µs, duty cycle ≤ 2%.