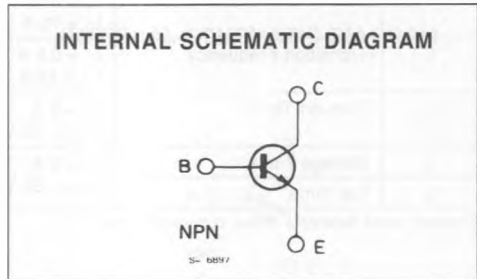
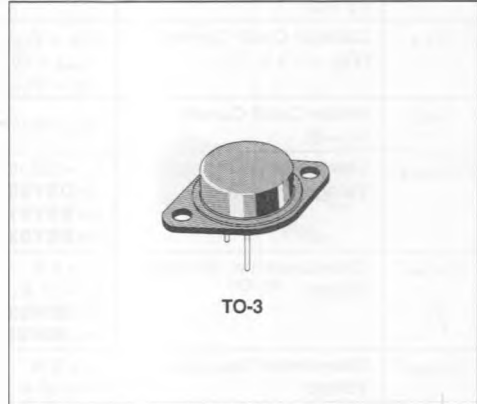


HIGH CURRENT, HIGH SPEED TRANSISTORS

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 BDY90 for BDY91 for BDY92	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 BDY90, BDY91 for BDY92			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%.