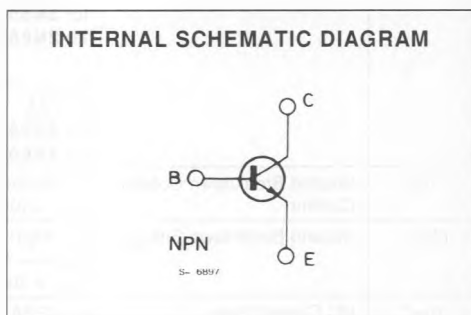
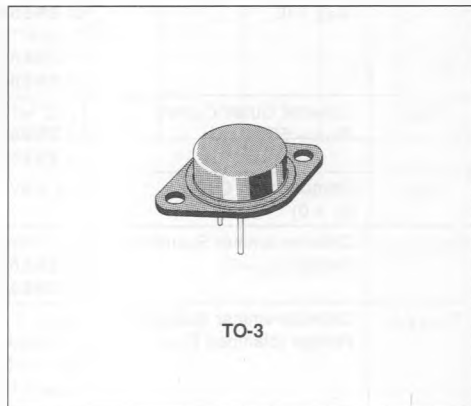


HIGH VOLTAGE POWER SWITCH

DESCRIPTION

The 2N6544 and 2N6545 are multi-epitaxial mesa NPN transistors in Jedec TO-3 metal case. They are intended for high voltage, fast switching applications.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	2N6544	2N6545	Unit
V_{CES}	Collector-emitter Voltage ($V_{BE} = 0$)	650	850	V
V_{CEX}	(clamped) Collector-emitter Voltage ($V_{BE} = -5V$)	350	450	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	300	400	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	9		V
I_C	Collector Current	8		A
I_{CM}	Collector Peak Current ($t_p = 10ms$)	16		A
I_B	Base Current	8		A
P_{Tot}	Total Power Dissipation at $T_{case} \leq 25^\circ C$	125		W
T_{stg}	Storage Temperature	- 65 to 200		$^\circ C$
T_J	Junction Temperature	200		$^\circ C$

THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	1.4	°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_{CES}	Collector Cutoff Current ($V_{BE} = 0$)	for 2N6544 $V_{CE} = 650V$ for 2N6545 $V_{CE} = 850V$ $T_{case} = 100^{\circ}C$ for 2N6544 $V_{CE} = 650V$ for 2N6545 $V_{CE} = 850V$			0.5 0.5 2.5 2.5	mA mA mA mA
I_{CER}	Collector Cutoff Current ($R_{BE} = 50\Omega$)	$T_{case} = 100^{\circ}C$ for 2N6544 $V_{CE} = 650V$ for 2N6545 $V_{CE} = 850V$			3 3	mA mA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 9V$			1	mA
$V_{CEO(sus)}^*$	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = 100mA$ for 2N6544 for 2N6545	300 400			V V
$V_{CEX(sus)}$	Collector-emitter Sustaining Voltage (clamped $E_{s/b}$)	$I_C/I_B = 5$ $L = 180\mu H$ $V_{BE} = -5V$ $T_{case} = 100^{\circ}C$ $V_{clamp} = \text{rated } V_{CEX(sus)}$ $I_C = 4.5A$ for 2N6544 for 2N6545 $V_{clamp} = \text{rated } V_{CEO(sus)} - 100V$ $I_C = 8A$ for 2N6544 for 2N6545	350 450 200 300			V V V V
$I_{s/b}$	Second Breakdown Collector Current	$t = 1s$ (non repetitive) $V_{CE} = 100V$	0.2			A
$E_{s/b}$	Second Breakdown Energy	$L = 40\mu H$ $V_{BE} = -4V$ $R_{BE} = 50\Omega$	500			μJ
h_{FE}^*	DC Current Gain	$I_C = 2.5A$ $V_{CE} = 3V$ $I_C = 5A$ $V_{CE} = 3V$	12 7		60 35	
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 5A$ $I_B = 1A$ $I_C = 8A$ $I_B = 2A$ $T_{case} = 100^{\circ}C$ $I_C = 5A$ $I_B = 1A$			1.5 5 2.5	V V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 5A$ $I_B = 1A$ $T_{case} = 100^{\circ}C$ $I_C = 5A$ $I_B = 1A$			1.6 1.6	V V
f_T	Transistion Frequency	$I_C = 0.3A$ $V_{CE} = 10V$ $f = 1MHz$	6		24	MHz
C_{CBO}	Collector-base Capacitance	$V_{CB} = 10V$ $I_E = 0$ $f = 1MHz$			200	pF

ELECTRICAL CHARACTERISTICS (continued)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t_{on}	Turn-on Time	RESISTIVE LOAD $I_C = 5A$ $V_{CC} = 250V$ $I_{B1} = -I_{B2} = 1A$			1	μs
t_s	Storage Time				4	μs
t_f	Fall Time				1	μs
t_s	Storage Time	INDUCTIVE LOAD $I_C = 5A(pk)$ $I_{B1} = 1A$ $V_{BE} = -5V$ $L = 180\mu H$ $T_{case} = 100^\circ C$ for 2N6544 $V_{clamp} = 350V$ for 2N6545 $V_{clamp} = 450V$			4	μs
t_f	Fall Time				0.9	μs

* Pulsed : pulse duration = 300 μs , duty cycle = 1.5%.
For characteristic curves see the BUX47 type.