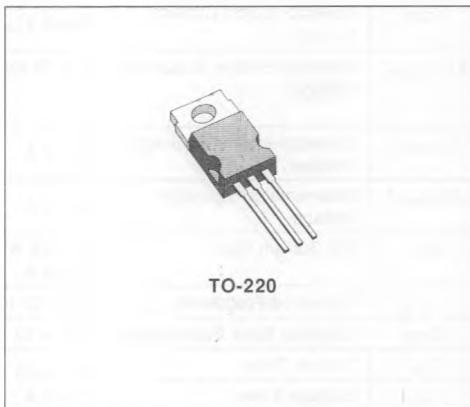


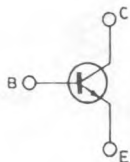
MULTIEPITAXIAL PLANAR NPN

DESCRIPTION

The D44Q1, D44Q3, D44Q5 are silicon multiepitaxial planar transistors in TO-220 plastic package intended for linear and switching applications.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value			Unit
		D44Q1	D44Q3	D44Q5	
V_{CBO}	Collector-base Voltage ($I_E = 0$)	200	250	300	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	125	175	225	V
V_{EBO}	Emitter-base Voltage ($I_B = 0$)	7	7	7	V
I_C	Collector Current	4			A
P_{tot}	Total Power Dissipation $T_{case} \leq 25^\circ\text{C}$ $T_{amb} \leq 25^\circ\text{C}$	31.25			W
		1.67			W
T_{stg}	Storage Temperature	- 55 to 150			$^\circ\text{C}$
T_j	Junction Temperature	150			$^\circ\text{C}$

THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	4	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	75	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	Rated V_{CE0}			10	μA
$V_{CE0(sus)}^*$	Collector Emitter Sustaining Voltage	$I_C = 10\text{ mA}$ for D44Q1 for D44Q3 for D44Q5	125 175 225			V V V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 2\text{ A}$ $I_B = 0.2\text{ A}$			1	V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 2\text{ A}$ $I_B = 0.2\text{ A}$			1.3	V
h_{FE}^*	DC Current Gain	$I_C = 0.2\text{ A}$ $V_{CE} = 10\text{ V}$ $I_C = 2\text{ A}$ $V_{CE} = 10\text{ V}$	30 20			
f_T	Transition Frequency	$I_C = 100\text{ mA}$ $V_{CE} = 10\text{ V}$		20		MHz
C_{CBO}	Collector Base Capacitance	$V_{CB} = 10\text{ V}$ $f = 1\text{ MHz}$		32		pF
t_{on}	Turn-in Time	$V_{CC} = 50\text{ V}$ $I_C = 1\text{ A}$ $I_{B1} = -I_{B2} = 0.1\text{ A}$			0.4	μs
t_s	Storage Time				2	μs
t_f	Fall Time				1.7	μs

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