

8368602 SOLITRON DEVICES INC

61C 00476 D

POWER TRANSISTORS
 2N3750 2N3751 2N3752

T-33-09

NPN SILICON POWER TRANSISTORS
MEDIUM VOLTAGE

5 AMPERES

FEATURES

ISOLATED COLLECTOR PACKAGE
 GREATER GAIN STABILITY

APPLICATIONS

HIGH POWER, HIGH FREQUENCY
 SWITCHING AND AMPLIFYING



TO-111/I

ABSOLUTE MAXIMUM RATINGS

		<u>2N3750</u>	<u>2N3751</u>	<u>2N3752</u>
V _{CB0}	COLLECTOR-BASE VOLTAGE	60 V	80 V	100 V
V _{CE0}	COLLECTOR-EMITTER VOLTAGE	40 V	60 V	80 V
V _{EB0}	EMITTER-BASE VOLTAGE	7 V	7 V	7 V
I _C	CONTINUOUS COLLECTOR CURRENT	5 A	5 A	5 A
I _B	CONTINUOUS BASE CURRENT	0.5 A	0.5 A	0.5 A
T _J	OPERATING JUNCTION TEMPERATURE	_____ -65°C to +200°C _____		
T _{stg}	STORAGE TEMPERATURE	_____ -65°C to +200°C _____		
R _{θJC}	THERMAL RESISTANCE, JUNCTION TO CASE	3.33°C/W		
P _D	POWER DISSIPATION (100°C)	30 W		

4-83-184

II-38

2306

D-05

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ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

CHARACTERISTICS	SYMBOL	MIN.	MAX.	UNITS
COLLECTOR-EMITTER VOLTAGE ($I_C = 10\text{mA}$)	2N3750 2N3751 2N3752	V_{CE0}	40 60 80	V V V
COLLECTOR-BASE VOLTAGE ($I_C = 10\mu\text{A}$)	2N3750 2N3751 2N3752	V_{CB0}	60 80 100	V V V
COLLECTOR-EMITTER SUSTAINING VOLTAGE * ($I_C = 100\text{mA}$)	2N3750 2N3751 2N3752	$V_{CE0(sus)}$	30 50 70	V V V
EMITTER-BASE VOLTAGE ($I_E = 10\mu\text{A}$)	2N3750 2N3751 2N3752	V_{EB0}	7 8	V V
DC CURRENT GAIN * ($I_C = 1\text{A}, V_{CE} = 5\text{V}$) ($I_C = 1\text{A}, V_{CE} = 2\text{V}, T = -55^\circ\text{C}$) ($I_C = 5\text{A}, V_{CE} = 5\text{V}$) ($I_C = 10\text{mA}, V_{CE} = 2\text{V}$)		h_{FE}	100 20 30 75	300
COLLECTOR-EMITTER SATURATION VOLTAGE * ($I_C = 1\text{A}, I_B = 0.1\text{A}$) ($I_C = 5\text{A}, I_B = 0.5\text{A}$)		$V_{CE(sat)}$		0.25 2.0 V V
BASE-EMITTER VOLTAGE * ($I_C = 1\text{A}, V_{CE} = 5\text{V}$)		V_{BE}		1.2 V
BASE-EMITTER SATURATION VOLTAGE * ($I_C = 1\text{A}, I_B = 0.1\text{A}$)		$V_{BE(sat)}$		1.2 V
COLLECTOR CUTOFF CURRENT, REVERSE BIAS ($V_{EB} = 0.5\text{V}, V_{CE} = 60\text{V}$) ($V_{EB} = 0.5\text{V}, V_{CE} = 80\text{V}$) ($V_{EB} = 0.5\text{V}, V_{CE} = 100\text{V}$) ($V_{EB} = 0.5\text{V}, V_{CE} = 40\text{V}, T_C = 150^\circ\text{C}$) ($V_{EB} = 0.5\text{V}, V_{CE} = 60\text{V}, T_C = 150^\circ\text{C}$)	2N3750 2N3751 2N3752 2N3750 2N3751, 52	I_{CEX}	10 10 10 50 50	μA μA μA μA μA
COLLECTOR-BASE CUTOFF CURRENT ($V_{CB} = 30\text{V}$) ($V_{CB} = 60\text{V}$)	2N3750 2N3751 2N3752	I_{CB0}		0.1 0.1 μA μA
EMITTER-BASE CUTOFF CURRENT ($V_{EB} = 5\text{V}$) ($V_{EB} = 7\text{V}$) ($V_{EB} = 8\text{V}$)	ALL 2N3750 2N3751, 2N3752	I_{EB0}		0.1 10 10 μA μA μA
COLLECTOR-EMITTER CUTOFF CURRENT ($V_{CE} = 30\text{V}$) ($V_{CE} = 50\text{V}$)	2N3750 2N3751, 2N3752	I_{CE0}		100 100 μA μA
MAGNITUDE OF SMALL SIGNAL GAIN ($V_{CE} = 10\text{V}, I_C = 1\text{A}, f = 10\text{MHz}$)		$[h_{fe}]$	4	
SMALL SIGNAL GAIN ($V_{CB} = 5\text{V}, I_E = 50\text{mA}, f = 1\text{kHz}$)		h_{fe}	100	350
OUTPUT CAPACITANCE ($V_{CB} = 10\text{V}, f = 1\text{MHz}$)		C_{ob0}		150 pF
PULSE RISE TIME ($V_{CC} = 25\text{V}, I_C = 1.0\text{A}, I_{B1} = -I_{B2} = 100\text{mA}$)		t_r		80 nsec
PULSE STORAGE TIME ($V_{CC} = 25\text{V}, I_C = 1.0\text{A}, I_{B1} = -I_{B2} = 100\text{mA}$)		t_s		60 nsec
PULSE FALL TIME		t_f		80 nsec
For typical curves see 2N2878, 2N2880				

* PULSE $\leq 400 \mu\text{sec}$; 2% DUTY CYCLE.