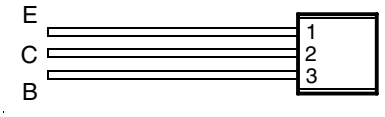
BOURNS®

- **20 W Pulsed Power Dissipation**
- **100 V Capability**
- **2 A Continuous Collector Current**
- **4 A Peak Collector Current**

LP PACKAGE
(TOP VIEW)



MDTRAB

absolute maximum ratings at 25°C case temperature (unless otherwise noted)

RATING		SYMBOL	VALUE	UNIT
Collector-base voltage (I_E = 0)	TIPP110	V_{CBO}	60	V
	TIPP111		80	
	TIPP112		100	
Collector-emitter voltage (I_B = 0)	TIPP110	V_{CEO}	60	V
	TIPP111		80	
	TIPP112		100	
Emitter-base voltage		V_{EBO}	5	V
Continuous collector current		I_C	2	A
Peak collector current (see Note 1)		I_{CM}	4	A
Continuous base current		I_B	50	mA
Continuous device dissipation at (or below) 25°C case temperature (see Note 2)		P_{tot}	0.8	W
Pulsed power dissipation (see Note 3)		P_T	20	W
Operating junction temperature range		T_j	-55 to +150	°C
Storage temperature range		T_{stg}	-55 to +150	°C
Lead temperature 3.2 mm from case for 10 seconds		T_L	260	°C

NOTES: 1. This value applies for $t_p \leq 0.3$ ms, duty cycle ≤ 10%.
2. Derate linearly to 150°C case temperature at the rate of 0.32 W/°C.
3. V_{CE} = 20 V, I_C = 1 A, P_W = 10 ms, duty cycle ≤ 2%.

electrical characteristics at 25°C case temperature

PARAMETER		TEST CONDITIONS			MIN	TYP	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C = 10 mA (see Note 4)	I_B = 0	TIPP110 TIPP111 TIPP112	60 80 100			V
I_{CEO}	Collector-emitter cut-off current	V_{CE} = 30 V V_{CE} = 40 V V_{CE} = 50 V	V_{BE} = 0 V_{BE} = 0 V_{BE} = 0	TIPP110 TIPP111 TIPP112			2 2 2	mA
I_{CBO}	Collector-base cut-off current	V_{CE} = 60 V V_{CE} = 80 V V_{CE} = 100 V	I_B = 0 I_B = 0 I_B = 0	TIPP110 TIPP111 TIPP112			1 1 1	mA
I_{EBO}	Emitter cut-off current	V_{EB} = 5 V	I_C = 0				2	mA
h_{FE}	Forward current transfer ratio	V_{CE} = 4 V V_{CE} = 4 V	I_C = 1 A I_C = 2 A	(see Notes 4 and 5)	1000 500			
$V_{CE(sat)}$	Collector-emitter saturation voltage	I_B = 8 mA	I_C = 2 A	(see Notes 4 and 5)			2.5	V
V_{BE}	Base-emitter voltage	V_{CE} = 4 V	I_C = 2 A	(see Notes 4 and 5)			2.8	V
V_{EC}	Parallel diode forward voltage	I_E = 4 A	I_B = 0	(see Notes 4 and 5)			3.5	V

NOTES: 4. These parameters must be measured using pulse techniques, t_p = 300 µs, duty cycle ≤ 2%.
5. These parameters must be measured using voltage-sensing contacts, separate from the current carrying contacts and located within 3.2 mm from device body.