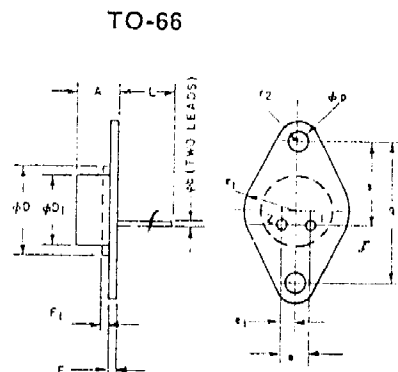


High-Speed,
Silicon N-P-N

MAXIMUM RATINGS, Absolute-Maximum Values:

*COLLECTOR-TO-BASE VOLTAGE	V _{CB0}	100	V
COLLECTOR-TO-EMITTER SUSTAINING VOLTAGE: With external base-to-emitter resistance (R _{BE}) = 50 Ω	V _{CEr(sus)}	75 ⁺	V
With base open	V _{CEO(sus)}	50	V
*EMITTER-TO-BASE VOLTAGE	V _{EBO}	6	V
*CONTINUOUS COLLECTOR CURRENT	I _C	4	A
PEAK COLLECTOR CURRENT	I _{CM}	5	A
*CONTINUOUS BASE CURRENT	I _B	2	A
*TRANSISTOR DISSIPATION: At case temperature (T _C) = 25°C	P _T	35	W
At case temperatures above 25°C		Derate linearly at 0.2 W/°C	
For other conditions			
*TEMPERATURE RANGE: Storage & operating (Junction)		-65 to 200	°C
*PIN TEMPERATURE: 1/32 in. (0.8 mm) from seating plane for 10 s max.		235	°C

Dimensional Outlines



ELECTRICAL CHARACTERISTICS, At Case Temperature (T_C) = 25°C unless otherwise specified:

CHARACTERISTIC	SYMBOL	TEST CONDITIONS				LIMITS		UNITS
		VOLTAGE V dc		CURRENT A dc		2N5202		
		V _{CE}	V _{BE}	I _C	I _B	Min.	Max.	
Collector Cutoff Current: With base-emitter junction reverse-biased	I _{CEV}	100	-1.5			--	10	mA
With base-emitter junction reverse-biased and T _C = 150°C		100	-1.5			--	10	
Emitter Cutoff Current	I _{EBO}		-6			--	10	mA
Collector-to-Emitter Sustaining Voltage With base open	V _{CEO(sus)}			0.2	0	50 ^a	--	V
With external base-to-emitter resistance (R _{BE}) = 50 Ω	V _{CEr(sus)}			0.2	0	75 ^a	--	
DC Forward-Current Transfer Ratio	h _{FE}	1.2				10 ^a	100 ^a	
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}			4 ^b	0.4	--	1.2	V
Base-to-Emitter Voltage	V _{BE}	2		4 ^b	--	--	--	V
Base-to-Emitter Saturation Voltage	V _{BE(sat)}			4 ^b	0.4	--	2	V
Collector-to-Base Output Capacitance (f = 1 MHz, V _{CB} = 10 V)	C _{ob}					--	175	pF
Second Breakdown Collector Current: With base forward-biased and 1-μs nonrepetitive pulse	I _{S/B}	40				400	--	mA
Magnitude of Common Emitter, Small-Signal, Short-Circuit, Forward-Current Transfer Ratio (f = 10 MHz)	h _{te}	10		0.5		6	--	
Thermal Resistance Junction-to-case	R _{θJC}					--	5	°C/W

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	.250	.340	6.35	8.63	3
B ₁	.028	.034	.712	.863	
∅D	--	.620	--	15.74	
∅D ₁	.470	.500	11.94	12.70	4
e	.190	.210	4.83	5.33	
B ₂	.093	.107	2.37	2.71	3
F	.050	.075	1.27	1.90	
F ₁	--	.050	--	1.27	
L	.360	--	9.15	--	
∅P	.142	.162	3.61	4.08	
q	.950	.970	24.13	24.63	
r ₁	--	.350	--	8.89	
r ₂	--	.145	--	.368	
s	.570	.590	14.48	14.98	

- 3. Package contour optional within dimensions specified.
- 4. Dimension does not include sealing flanges.
- 5. Controlling dimensions: inch.

