

FEATURES

- High current (max. 600 mA)
- Low voltage (max. 65 V).

APPLICATIONS

- Switching applications.

DESCRIPTION

PNP transistor in a TO-39 metal package.

PINNING

PIN	DESCRIPTION
1	emitter
2	base
3	collector, connected to case

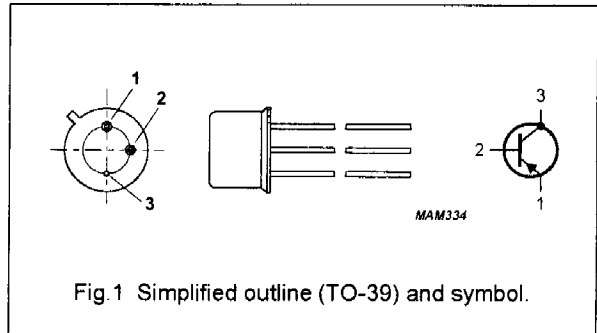


Fig. 1 Simplified outline (TO-39) and symbol.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	-	-	-65	V
V_{CEO}	collector-emitter voltage	open base	-	-	-65	V
I_C	collector current (DC)		-	-	-600	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25^\circ C$	-	-	600	mW
h_{FE}	DC current gain	$I_C = -10 \text{ mA}; V_{CE} = -400 \text{ mV}$	50	90	200	
f_T	transition frequency	$I_C = -50 \text{ mA}; V_{CE} = -10 \text{ V}; f = 100 \text{ MHz}$	100	-	-	MHz
t_{off}	turn-off time	$I_{Con} = -150 \text{ mA}; I_{Bon} = -15 \text{ mA}; I_{Boff} = 10 \text{ mA}$	-	-	300	ns

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	-	-65	V
V_{CEO}	collector-emitter voltage	open base	-	-65	V
V_{EBO}	emitter-base voltage	open collector	-	-5	V
I_C	collector current (DC)		-	-600	mA
I_{CM}	peak collector current		-	-600	mA
I_{BM}	peak base current		-	-200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25^\circ C$	-	600	mW
T_{stg}	storage temperature		-65	+150	$^\circ C$
T_j	junction temperature		-	200	$^\circ C$
T_{amb}	operating ambient temperature		-65	+150	$^\circ C$

THERMAL CHARACTERISTICS

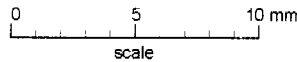
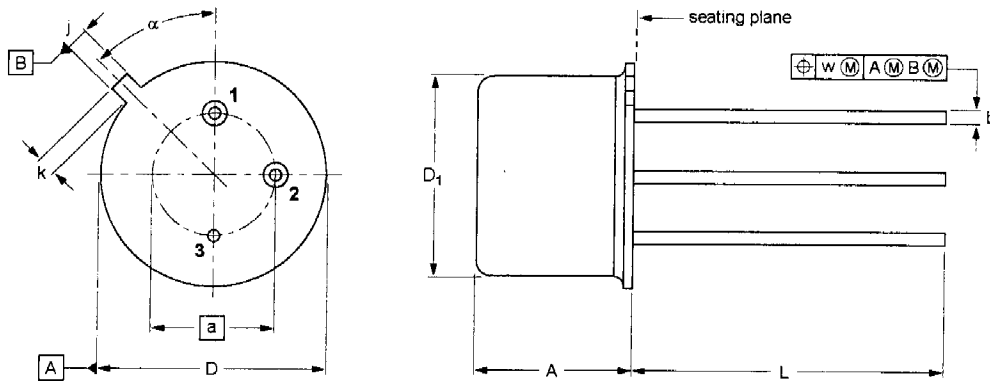
SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	300	K/W



CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -65\text{ V}$	-	-	-500	nA
		$I_E = 0; V_{CB} = -50\text{ V}$	-	-	-50	nA
		$I_E = 0; V_{CB} = -50\text{ V}; T_j = 100\text{ }^\circ\text{C}$	-	-	-2	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	-	-	-500	nA
		$I_C = 0; V_{EB} = -3\text{ V}$	-	-	-100	nA
h_{FE}	DC current gain	$I_C = -1\text{ mA}; V_{CE} = -400\text{ mV}$	40	-	-	
		$I_C = -10\text{ mA}; V_{CE} = -400\text{ mV}$	50	90	200	
		$I_C = -50\text{ mA}; V_{CE} = -400\text{ mV}$	20	-	-	
		$I_C = -150\text{ mA}; V_{CE} = -400\text{ mV}$	10	-	-	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -150\text{ mA}; I_B = -15\text{ }\mu\text{A}$	-	-	-400	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = -30\text{ mA}; I_B = -1\text{ mA}$	-	-	-900	mV
		$I_C = -150\text{ mA}; I_B = -15\text{ mA}$	-	-	-1.3	V
C_c	collector capacitance	$I_E = i_e = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	-	6	-	pF
C_e	emitter capacitance	$I_C = i_c = 0; V_{EB} = -2\text{ V}; f = 1\text{ MHz}$	-	18	-	pF
f_T	transition frequency	$I_C = -50\text{ mA}; V_{CE} = -10\text{ V}; f = 100\text{ MHz}$	100	-	-	MHz
Switching Times (between 10% and 90% levels); see Fig.2						
t_{on}	turn-on time	$I_{Con} = -150\text{ mA}; I_{Bon} = -15\text{ mA};$ $I_{Boff} = 15\text{ mA}$	-	-	45	ns
t_d	delay time		-	-	15	ns
t_r	rise time		-	-	35	ns
t_{off}	turn-off time		-	-	300	ns
t_s	storage time		-	-	250	ns
t_f	fall time		-	-	50	ns



DIMENSIONS (mm are the original dimensions)

UNIT	A	a	b	D	D_1	j	k	L	w	α
mm	6.60	5.08	0.48	9.39	8.33	0.85	0.95	14.2	0.2	45°
	6.35		0.41	9.08	8.18	0.75	0.75	12.7		