

# General Purpose Transistor



## Pin Configuration

1. Emitter
2. Base
3. Collector

## Features:

- PNP Silicon Planar RF Transistor
- Small Signal General Purpose Amplifier, Transistor

## Absolute Maximum Ratings:

( $T_a = 25^\circ\text{C}$  unless otherwise specified)

Characteristic	Symbol	Value	Unit
Collector Base Voltage	$V_{\text{CBO}}$	80	V
Collector-Emitter Voltage	$V_{\text{CEO}}$		
Emitter-Base Voltage	$V_{\text{EBO}}$		
Collector Current	$I_{\text{CM}}$	1	A
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_{\text{D}}$	800	mW
		4.6	mW/ $^\circ\text{C}$
Power Dissipation at $T_c = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$		4	W
		22.85	mW/ $^\circ\text{C}$
Operating and Storage Temperature Range	$T_j, T_{\text{stg}}$	-65 to +200	$^\circ\text{C}$

# General Purpose Transistor

## Electrical Characteristics:

( $T_a = +25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Max.	Unit
Collector Emitter Breakdown Voltage	$BV_{CEO}^*$	$I_C = 10\text{mA}, I_B = 0$	80	-	V
Collector Base Breakdown Voltage	$BV_{CBO}$	$I_C = 10\mu\text{A}, I_E = 0$			
Emitter Base Breakdown Voltage	$BV_{EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	5		
Collector Leakage Current	$I_{CBO}$	$V_{CB} = 60\text{V}, I_E = 0$	-	50	nA
		$V_{CB} = 60\text{V}, T_A = 150^\circ\text{C}$			$\mu\text{A}$
Emitter Leakage Current	$I_{EBO}$	$V_{EB} = 5\text{V}, I_C = 0$		10	$\mu\text{A}$
Collector Emitter Saturation Voltage	$V_{CE(Sat)}^*$	$I_C = 150\text{mA}, I_B = 15\text{mA}$	-	0.15	V
		$I_C = 500\text{mA}, I_B = 50\text{mA}$		0.5	
Base Emitter Saturation Voltage	$V_{BE(Sat)}^*$	$I_C = 150\text{mA}, I_B = 15\text{mA}$		0.9	
Base Emitter On Voltage	$V_{BE(on)}^*$	$I_C = 500\text{mA}, V_{CE} = 0.5\text{V}$		1.1	
DC Current Gain	$h_{FE}^*$	$I_C = 100\text{mA}, V_{CE} = 5\text{V}$	75	300	-
		$I_C = 100\text{mA}, V_{CE} = 5\text{V}$	100		
		$I_C = 100\text{mA}, V_{CE} = 5\text{V}, T_a = -55^\circ\text{C}$	40		
		$I_C = 1\text{A}, V_{CE} = 5\text{V}$	25		

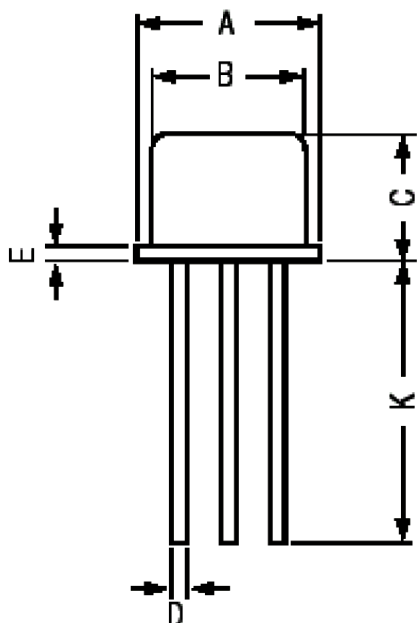
## Small Signal Characteristics

Transition Frequency	$f_T$	$I_C = 50\text{mA}, V_{CE} = 10\text{V}, f = 100\text{MHz}$	150	500	MHz
Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	-	20	pF
Input Capacitance	$C_{ib}$	$V_{BE} = 0.5\text{V}, I_C = 0, f = 1\text{MHz}$		110	
Turn on Time	$t_{on}$	$I_C = 500\text{mA}, I_{B1} = 50\text{mA}$		100	ns
Storage Time		$I_C = 500\text{mA}, I_{B1} = I_{B2} = 50\text{mA}$	350		
Fall Time	$t_f$	$I_C = 500\text{mA}, I_{B1} = I_{B2} = 50\text{mA}$	50		

\*Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

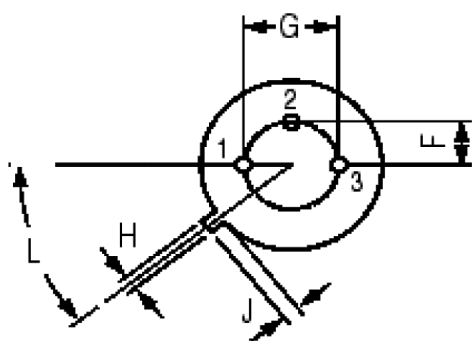
# General Purpose Transistor

## TO-39 Metal Can Package



Dim.	Min.	Max.
A	8.5	9.39
B	7.74	8.5
C	6.09	6.6
D	0.4	0.53
E	-	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.7	-
L	42°	48°

Dimensions : Millimetres



### Pin Configuration

1. Emitter
2. Base
3. Collector

### Part Number Table

Description	Part Number
Transistor, PNP, TO-39	2N4033

**Important Notice :** This data sheet and its contents (the "Information") belong to the members of the Premier Farnell group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp is the registered trademark of the Group. © Premier Farnell plc 2012.