

Transistor

PNP, TO-19

multicomp **PRO**



Pin Configuration

1. Emitter
2. Base
3. Collector

Features:

- PNP Silicon Planar Switching Transistor
- Fast switching devices exhibiting short turn-off and low saturation voltage characteristics
- Switching And Linear Application DC to VHF Amplifier Applications

Absolute Maximum Ratings:

Parameter	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	60	V
Collector-Base Voltage	V_{CBO}		
Emitter-Base Voltage	V_{EBO}		
Collector Current Continuous	I_C	600	mA
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate above 25°C	P_D	600	mW
		3.43	mW/ $^\circ\text{C}$
Power Dissipation at $T_c = 25^\circ\text{C}$ Derate above 25°C		3	W
		17.2	mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_j, T_{stg}	-65 to +200	$^\circ\text{C}$

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
Element14.com/multicomp-pro

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

Parameter	Symbol	Test Condition	Value		Unit
			Min.	Max.	
Collector-Emitter Voltage	V_{CEO}^*	$I_C = 10\text{mA}, I_B = 0$	60	-	V
Collector-Base Voltage	V_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$		-	
Emitter-Base Voltage	V_{EBO}	$I_E = 10\mu\text{A}, I_C = 0$	5	-	
Collector-Cut off Current	I_{CBO} I_{CEX}	$T_A = 150^\circ\text{C}$ $V_{CB} = 50\text{V}, I_E = 0$ $V_{CE} = 30\text{V}, V_{BE} = 0.5\text{V}$	-	10	nA
			-	10	μA
			-	50	nA
Base Current	I_B	$V_{CE} = 30\text{V}, V_{BE} = 0.5\text{V}$	-	50	nA
Collector Emitter Saturation Voltage	$V_{CE(sat)}^*$	$I_C = 150\text{mA}, I_B = 15\text{mA}$	-	0.4	V
Base Emitter Saturation Voltage	$V_{BE(sat)}^*$	$I_C = 150\text{mA}, I_B = 15\text{mA}$ $I_C = 500\text{mA}, I_B = 50\text{mA}$	-	1.3 2.6	
DC Current Gain	h_{FE}	$I_C = 0.1\text{mA}, V_{CE} = 10\text{V}$ $I_C = 1\text{mA}, V_{CE} = 10\text{V}$ $I_C = 10\text{mA}, V_{CE} = 10\text{V}$ $I_C = 150\text{mA}, V_{CE} = 10\text{V}^*$ $I_C = 500\text{mA}, V_{CE} = 10\text{V}^*$	>75	-	-
			>100	-	
			>100	-	
			100 - 300	-	
			>50	-	

Dynamic Characteristics

Transition Frequency	ft**	$I_C = 50\text{mA}, V_{CE} = 20\text{V}, f = 100\text{MHz}$	200	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 100\text{kHz}$	-	8	pF
Input Capacitance	C_{ib}	$V_{BE} = 2\text{V}, I_C = 0, f = 100\text{kHz}$	-	30	

Switching Time

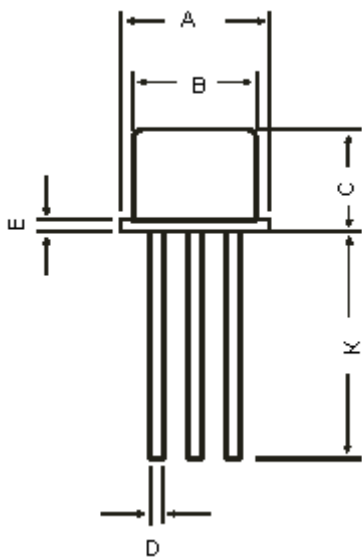
Delay Time	t_d	$I_C = 150\text{mA}, I_{B1} = 15\text{mA}$	-	10	ns
Rise Time	t_r	$V_{CC} = 30\text{V}$	-	40	
Turn-on Time	t_{on}	-	-	45	
Storage time	t_s	$I_C = 150\text{mA}, I_{B1} = I_{B2} = 15\text{mA}$	-	80	
Fall Time	t_f	$V_{CC} = 6\text{V}$	-	30	
Turn-off Time	t_{off}	-	-	100	

Pulse Test: Pulse Width = 300 μs , Duty Cycle = 2%.

** ft is defined as the frequency at which h_{fe} extrapolates to unity.

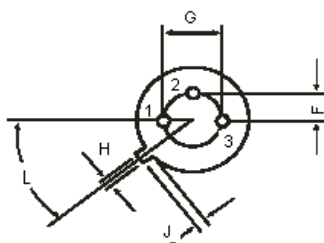
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TO-39 Metal Can Package



Dimensions	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
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Part Number Table

Description	Part Number
Transistor, PNP, TO-39	2N2905A

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