PNP 2N4030 – 2N4031 – 2N4032 – 2N4033

GENERAL PURPOSE AMPLIFIERS AND SWITCHES

They are silicon planar epitaxial PNP transistors mounted in TO-39 metal package.
They are intended for large signal, low noise industrial applications.
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
$-V_{CBO}$	Collector-Base Voltage $I_E = 0$	2N4030	60	V
		2N4031	80	
		2N4032	60	
		2N4033	80	
$-V_{CEO}$	Collector-Emitter Voltage $I_B = 0$	2N4030	60	V
		2N4031	80	
		2N4032	60	
		2N4033	80	
$-V_{EBO}$	Emitter-Base Voltage $I_C = 0$	2N4030	5	V
		2N4031		
		2N4032		
		2N4033		
$-I_C$	Collector Current	2N4030	1	A
		2N4031		
		2N4032		
		2N4033		
P_{tot}		@ T_{case}= < 25°	4	W
		@ T_{amb}= < 25°	0.8	
T_J	Junction Temperature		200	°C
T_{Stg}	Storage Temperature range		-65 to +200	°C

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-c}	Thermal Resistance, Junction-case	44	K/ W
$R_{thJ-amb}$	Thermal Resistance, Junction-ambient	218	K/ W

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)			Min	Typ	Max	Unit
$-I_{CBO}$	Collector Cutoff Current	$I_E = 0$, $V_{CB} = 50$ V		2N4030	-	-	50	nA
		$I_E = 0$, $V_{CB} = 60$ V		2N4031				
		$I_E = 0$; V $T_{amb} = 150°C$	V_{CB} =50 V	2N4030	-	-	50	µA
			V_{CB} =60 V	2N4031				
		$I_E = 0$, $V_{CB} = 50$ V		2N4032	-	-	50	nA
		$I_E = 0$, $V_{CB} = 60$ V		2N4033				
		$I_E = 0$ $T_{amb} = 150°C$	V_{CB} =50 V	2N4032	-	-	50	µA
			V_{CB} =60 V	2N4033				
$-V_{CB0}$	Collector – Base Breakdown Voltage	$-I_C = 10$ µA $I_E = 0$		2N4030	60	-	-	V
				2N4031	80	-	-	
				2N4032	60	-	-	
				2N4033	80	-	-	
$-V_{CE0}$ (*)	Collector – Emitter Breakdown Voltage	$-I_C = 10$ mA $I_B = 0$		2N4030	60	-	-	V
				2N4031	80	-	-	
				2N4032	60	-	-	
				2N4033	80	-	-	
$-V_{EB0}$	Emitter – Base Breakdown Voltage	$-I_E = 10$ µA $I_C = 0$		2N4030	5	-	-	V
				2N4031				
				2N4032				
				2N4033				
$-V_{CE(SAT)}$ (*)	Collector-Emitter Saturation Voltage	$-I_C = 150$ mA, $-I_B = 15$ mA			-	-	0.15	V
		$-I_C = 500$ mA, $-I_B = 50$ mA			-	-	0.5	
		$-I_C = 1$ A, $-I_B = 100$ mA		2N4030	-	-	1	
				2N4032				
$-V_{BE}$ (*)	Base-Emitter Saturation Voltage	$-I_C = 150$ mA, $-I_B = 15$ mA			-	-	0.9	
		$-I_C = 500$ mA, $-I_B = 50$ mA			-	-	1.1	
		$-I_C = 1$ A, $-I_B = 100$ mA		2N4030	-	-	1.2	
				2N4032				

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
h_{FE} (*)	DC Current Gain	$-I_C$ = 100 µA, $-V_{CE}$ = 5 V	2N4030	30	-	-	-
			2N4031				
			2N4032	75	-	-	
			2N4033				
		$-I_C$ = 100 mA, $-V_{CE}$ = 5V	2N4030	40	-	120	
			2N4031				
			2N4032	100	-	300	
			2N4033				
		$-I_C$ = 500 mA, $-V_{CE}$ = 5V	2N4030	25	-	-	
			2N4031				
			2N4032	70	-	-	
			2N4033				
		$-I_C$ = 1 A, $-V_{CE}$ = 5 V	2N4030	15	-	-	
			2N4031	10	-	-	
			2N4032	40	-	-	
			2N4033	25	-	-	
		$-I_C$ = 100 mA, $-V_{CE}$ = 5V T_{amb} = -55°c	2N4030	15	-	-	
			2N4031				
			2N4032	40	-	-	
			2N4033				
f_T	Transition Frequency	$-I_C$ = 50 mA, $-V_{CE}$ = 10 V f = 100 MH_Z	2N4030	100	-	400	MH_Z
			2N4031				
			2N4032	150	-	500	
			2N4033				
C_{EBO}	Emitter – base Capacitance	I_C = 0, $-V_{EB}$ = 0.5 V f = 1 MH_Z		-	-	110	pF
C_{CBO}	Collector – base Capacitance	I_E = 0, $-V_{CB}$ = 10V f = 1 MH_Z		-	-	20	pF
t_S	Storage times	$-I_C$ =500 mA, $-V_{CC}$ = 30V $-I_{B1}$ = $-I_{B1}$ = 50 mA		-	-	350	ns
t_f	Fall times	$-I_C$ =500 mA, $-V_{CC}$ = 30V $-I_{B1}$ = $-I_{B1}$ = 50 mA		-	-	50	ns
t_{on}	Turn-on times	$-I_C$ =500 mA, $-V_{CC}$ = 30V $-I_{B1}$ = $-I_{B1}$ = 50 mA		-	-	100	ns

(*) Pulsed : pulse duration = 300µs, duty cycle = 1%

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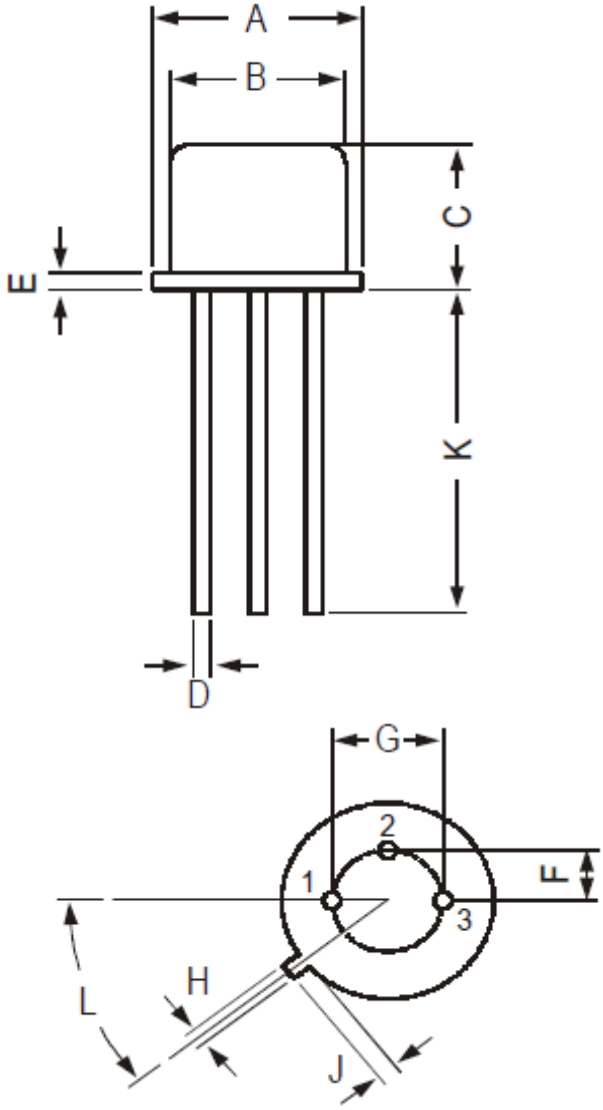
MECHANICAL DATA CASE TO-39

DIMENSIONS (mm)		
	min	max
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	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	12.70	-
L	42°	48°



Pin 1 :	Emitter
Pin 2 :	Base
Pin 3 :	Collector
Case :	Collector

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