NPN 2N3442 – 2N4347

HIGH POWER INDUSTRIAL TRANSISTORS

NPN silicon transistors in Jedec TO-39 metal case.
They are designed for applictions in industrial and commercial equipment including high fidelity audio amplifiers, series and shunts regulators and power switches.
Low Collector-Emitter Saturation Voltage.
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CEO}	Collector-Emitter Voltage		2N4347	120	V
			2N3442	140	
V_{CB}	Collector-Base Voltage		2N4347	140	V
			2N3442	160	
V_{EB}	Emitter-Base Voltage		2N4347	7	V
			2N3442		
I_C	Collector Current	Continuous	2N4347	5	A
			2N3442	10	
		Peak	2N4347	10	
			2N3442	15 (**)	
I_B	Base Current	Continuous	2N4347	3	A
			2N3442	7	
		Peak	2N4347	8	
			2N3442	-	
P_D	Total Device Dissipation	@ T_C = 25°	2N4347	100	W
			2N3442	117	
		Derate above 25°	2N4347	0.57	W/°C
			2N3442	0.67	
T_J	Junction Temperature		2N4347	-65 to +200	°C
			2N3442		
T_S	Storage Temperature		2N4347		°C
			2N3442		

(**) This data guaranteed in addition to JEDEC registered data.

THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
R_{thJC}	Thermal Resistance, Junction to Case	2N4347	1.75	°C/W
		2N3442	1.5	

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage (*)	I_C=200 mA, I_B=0	2N4347	120	-	-	V
			2N3442	140	-	-	
I_{CEO}	Collector-Emitter Current	V_{CE}=100 V, I_B=0	2N4347	-	-	200	mA
		V_{CE}=140 V, I_B=0	2N3442			200	
I_{CEX}	Collector Cutoff Current	V_{CE}=125 V, $V_{EB(off)}$=1.5 V	2N4347	-	-	2.0	mA
		V_{CE}=120 V, $V_{EB(off)}$=1.5 V T_C = 150°C				10	
		V_{CE}=140 V, $V_{EB(off)}$=1.5 V	2N3442	-	-	5.0	
		V_{CE}=140 V, $V_{EB(off)}$=1.5 V T_C = 150°C		-	-	30	
I_{EBO}	Emitter Cutoff Current	V_{BE}=7 V, I_C=0	2N4347	-	-	5.0	mA
			2N3442				
h_{FE}	DC Current Gain	I_C=2 A, V_{CE}=4.0 V	2N4347	15	-	60	-
		I_C=5 A, V_{CE}=4 V		10	-	-	
		I_C=3 A, V_{CE}=4 V	2N3442	20	-	70	
		I_C=10 A, V_{CE}=4 V		7.5	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage	I_C=2 A, I_B=200 mA	2N4347	-	-	1.0	V
		I_C=5 A, I_B=630 mA		-	-	2.0	
		I_C=10 A, I_B=200 mA	2N3442	-	-	5.0	
$V_{BE(on)}$	Base-Emitter Voltage	I_C=2 A, V_{CE}=4 V	2N4347	-	-	2.0	V
		I_C=5 A, V_{CE}=4 V		-	-	3.0	
		I_C=10 A, V_{CE}=4 V	2N3442	-	-	5.7	
h_{fe}	Small Signal Current Gain	V_{CE}=4 V, I_C=500 mA f=1 kHz	2N4347	40	-	-	-
		V_{CE}=4 V, I_C=2A f=1 kHz	2N3442	12	-	72	
$V_{CER(SUS)}$	Collector-Emitter Sustaining Voltage R_{BE}=100Ω	I_C=100 mA	2N4347	130	-	-	V
		I_C=200 mA		-	-	-	
		I_C=100 mA	2N3442	-	-	-	
		I_C=200 mA		150	-	-	
f_T	Current Gain – Bandwith Product	V_{CE}=4 V, I_C=500 mA f_{test} = 50 kHz	2N4347	200	-	-	kHz
		V_{CE}=4 V, I_C=500 mA f_{test} = 50 kHz	2N3442	80	-	-	
$I_{s/b}$	Second Breakdown Collector Current	V_{CE}=67 V, I_C=1.5 A	2N4347	1.0	-	-	s
		V_{CE}=78 V, I_C=1.5 A	2N3442	1.0	-	-	

(*) Pulse Width ≈ 300 μs, Duty Cycle ∠ 2.0%

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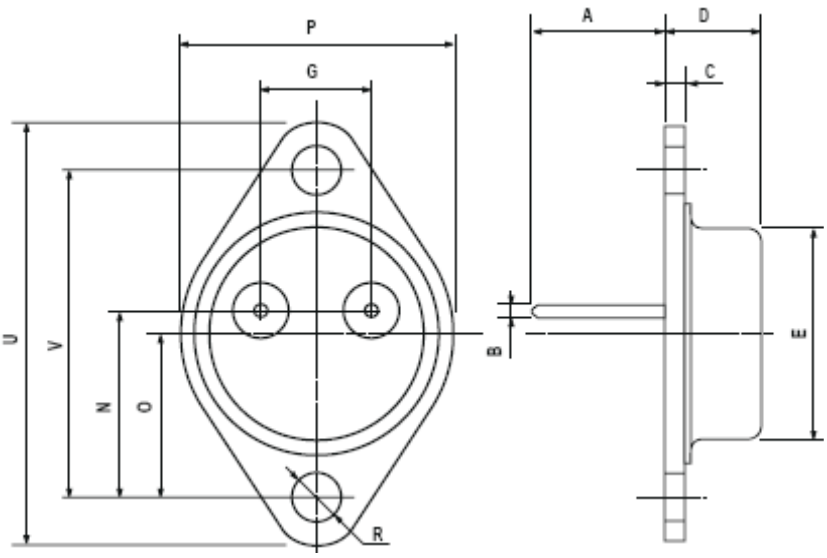
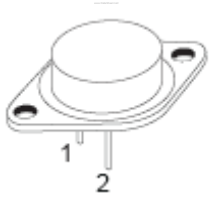
MECHANICAL DATA CASE TO-3

DIMENSIONS (mm)		
	min	max
A	11	13.10
B	0.97	1.15
C	1.5	1.65
D	8.32	8.92
F	19	20
G	10.70	11.1
N	16.50	17.20
P	25	26
R	4	4.09
U	38.50	39.30
V	30	30.30



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector



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