COMSET SEMICONDUCTORS

2N3442
2N4347

HIGH POWER INDUSTRIAL TRANSISTORS

NPN silicon transistors designed for applications in industrial and commercial equipment including high fidelity audio amplifiers, series and shunts regulators and power switches.

- Low Collector-Emitter Saturation Voltage –
  $V_{CE(sat)}$ = 1.0 Vdc (Max) @ I_C = 2.0 Adc – 2N4347
- Collector-Emitter Sustaining Voltage-
  VCEO(sus) = 120 Vdc (Min) – 2N4347
  140 Vdc (Min) – 2N3442
- Excellent Second-Breakdown Capability

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CEO}	#Collector-Emitter Voltage		**2N4347**	120	V
			2N3442	140	
V_{CB}	Collector-Base Voltage		**2N4347**	140	Vdc
			2N3442	160	
V_{EB}	Emitter-Base Voltage		**2N4347**	7.0	Vdc
			2N3442		
I_C	Collector Current	Continuous	**2N4347**	5.0	Adc
			2N3442	10	
		Peak	**2N4347**	10	
			2N3442	15 (**)	
I_B	Base Current	Continuous	**2N4347**	3.0	Adc
			2N3442	7.0	
		Peak	**2N4347**	8.0	
			2N3442	-	
P_D	Total Device Dissipation	@ T_C = 25°	**2N4347**	100	Watts W/°C
			2N3442	117	
		Derate above 25°	**2N4347**	0.57	
			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	

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

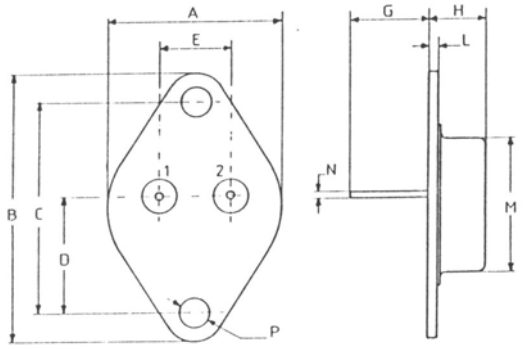
Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage (1)	I_C=200 mAdc, I_B=0	**2N4347**	120	-	-	Vdc
			2N3442	140	-	-	
$V_{CER(SUS)}$ R_{BE}=100Ω	Collector-Emitter Sustaining Voltage	I_C=0.1 Adc	**2N4347**	130	-	-	V
		I_C=0.2 Adc	**2N3442**	150	-	-	
I_{CEO}	Collector-Emitter Current	V_{CE}=100 Vdc, I_B=0	**2N4347**	-	-	200	mAdc
		V_{CE}=140 Vdc, I_B=0	**2N3442**			200	
I_{CEX}	Collector Cutoff Current	V_{CE}=125 Vdc, $V_{EB(off)}$=1.5 Vdc	**2N4347**	-	-	2.0	mAdc
		V_{CE}=120 Vdc, $V_{EB(off)}$=1.5 Vdc, T_C = 150°C				10	
		V_{CE}=140 Vdc, $V_{EB(off)}$=1.5 Vdc	**2N3442**	-	-	5.0	
		V_{CE}=140 Vdc, $V_{EB(off)}$=1.5 Vdc, T_C = 150°C		-	-	30	
I_{EBO}	Emitter Cutoff Current	V_{BE}=7.0 Vdc, I_C=0	**2N4347** **2N3442**	-	-	5.0	mAdc
h_{FE}	DC Current Gain	I_C=2.0 Adc, V_{CE}=4.0 Vdc	**2N4347**	15	-	60	-
		I_C=5.0 Adc, V_{CE}=4.0 Vdc		10	-	-	
		I_C=3.0 Adc, V_{CE}=4.0 Vdc	**2N3442**	20	-	70	
		I_C=10 Adc, V_{CE}=4.0 Vdc		4.0	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage	I_C=2.0 Adc, I_B=200 mAdc	**2N4347**	-	-	1.0	Vdc
		I_C=5.0 Adc, I_B=0.63 Adc		-	-	2.0	
		I_C=3.0 Adc, I_B=0.3 Adc	**2N3442**	-	-	1.0	
		I_C=10 Adc, I_B=0.2 Adc		-	-	5.0	

Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
$V_{BE(on)}$	Base-Emitter Voltage	I_C=2.0 Adc, V_{CE}=4.0 Vdc	**2N4347**	-	-	2.0	Vdc
		I_C=5.0 Adc, V_{CE}=4.0 Vdc		-	-	3.0	
		I_C=3.0 Adc, V_{CE}=4.0 Vdc	**2N3442**	-	-	1.7	
		I_C=10 Adc, V_{CE}=4.0 Vdc		-	-	5.7	
h_{fe}	Small Signal Current Gain	V_{CE}=4.0 Vdc, I_C=0.5 Adc, f=1.0 kHz	**2N4347**	40	-	-	-
		V_{CE}=4.0 Vdc, I_C=2.0 Adc, f=1.0 kHz	**2N3442**	12	-	72	
f_T	Current Gain – Bandwith Product (2)	V_{CE}=4.0 Vdc, I_C=0.5 Adc, f_{test} = 50 kHz	**2N4347**	200	-	-	kHz
		V_{CE}=4.0 Vdc, I_C=2.0 Adc, f_{test} = 40 kHz	**2N3442**	80	-	-	
$I_{s/b}$	Second Breakdown Collector Current	V_{CE}=67 Vdc, I_C=1.5 Adc	**2N4347**	1.0	-	-	s
		V_{CE}=78 Vdc, I_C=1.5 Adc	**2N3442**	1.0	-	-	

(1) Pulse Width ≈ 300 μs, Duty Cycle ∠ 2.0%
(2) $f_T = |h_{fe}| * f_{test}$

MECHANICAL DATA CASE TO-3

DIMENSIONS		
	mm	inches
A	25,51	1,004
B	38,93	1,53
C	30,12	1,18
D	17,25	0,68
E	10,89	0,43
G	11,62	0,46
H	8,54	0,34
L	1,55	0,6
M	19,47	0,77
N	1	0,04
P	4,06	0,16



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector