

File Number 528

2N3442, 2N4347, 2N6262

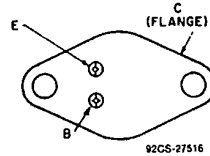
High-Voltage Silicon N-P-N Transistors

High-Power Devices for Applications in Industrial and Commercial Equipment

Features:

- Low saturation voltages
- High dissipation capability — 100 W (2N4347)
— 117 W (2N3442)
— 150 W (2N6262)
- Maximum area-of-operation curves for dc and pulse operation

TERMINAL DESIGNATIONS



JEDEC TO-204AA

RCA-2N3442, 2N4347, and 2N6262 are silicon n-p-n transistors intended for a wide variety of high-power, high-voltage applications. Typical applications for these transistors include power-switching circuits, audio amplifiers, series- and shunt-regulator driver and output stages, dc-to-dc converters, and solenoid (hammer)/relay driver service.

These devices employ the popular JEDEC TO-204AA package; they differ in maximum ratings for voltage, current, and power.

MAXIMUM RATINGS, Absolute-Maximum Values:

	2N4347	2N3442	2N6262	
*V _{CEO}	140	160	170	V
*V _{CE0}	120	140	150	V
V _{CEX} (V _{BE} = -1.5 V)	140*	160	170	V
*V _{EBO}	7	7	7	V
*I _C				
Continuous	5	10	10	A
Peak	10*	15	15	A
*I _B				
Continuous	3	7	7	A
Peak	8*	—	—	A
*P _T				
At T _C up to 25°C	100	117	150	W
At T _C above 25°C	See Figs. 1, 2, 3, & 4			
*T _J , T _{stg}	-65 to +200			°C
*T _L (During Soldering): At distances ≥ 1/32 in. (0.8 mm) from case for 10 s max.	235			°C

*In accordance with JEDEC registration data format (JS-6, RDF-2).

3875081 G E SOLID STATE
General-Purpose Power Transistors

01E 17362 D T-33-13

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ELECTRICAL CHARACTERISTICS, At Case Temperature (T_C) = 25°C unless otherwise specified

CHARACTERISTIC	TEST CONDITIONS				LIMITS						UNITS
	VOLTAGE V dc		CURRENT A dc		2N4347		2N3442		2N6262		
	V _{CE}	V _{BE}	I _C	I _B	Min.	Max.	Min.	Max.	Min.	Max.	
I _{CBO} I _E = 0 V _{CB} = 140 V					-	-	-	1*	-	1	mA
* I _{CEX}	120	-1.5			-	2	-	-	-	-	mA
	140	-1.5			-	-	-	5	-	-	
	140	-1.5			-	-	-	1	-	-	
	150	-1.5			-	-	-	-	-	0.1	
* T _C = 150°C	125	-1.5			-	10	-	-	-	-	mA
	140	-1.5			-	-	-	30	-	-	
	140	-1.5			-	-	-	10	-	-	
	150	-1.5			-	-	-	-	-	2	
* I _{CEO}	100				-	200	-	-	-	-	mA
	110				-	-	-	-	-	1	
	140				-	-	-	200	-	-	
* I _{EBO}		-7	0		-	5	-	5	-	0.2	mA
* h _{FE}	2		3 ^a		-	-	-	-	20	70	
	2		10 ^a		-	-	-	-	5	-	
	4		2 ^a		15	60	-	-	-	-	
	4		3 ^a		-	-	20	70	-	-	
	4		5 ^a		10	-	-	-	-	-	
	4		10 ^a		-	-	4	-	-	-	
V _{CEV(sus)}		-1.5	0.1		140	-	160	-	-	-	V
		-1.5	0.2		-	-	-	-	170	-	
V _{CER(sus)} (R _{BE}) = 100Ω			0.1		130	-	-	-	-	-	V
			0.2		-	-	150	-	160	-	
* V _{CEO(sus)}			0.2 ^a	0	120	-	140	-	-	-	V
			0.2 ^a	0	-	-	-	-	150	-	
* V _{BE}	2		3 ^a		-	-	-	-	-	1	V
	4		3 ^a		-	-	-	1.7	-	-	
	4		2 ^a		-	2	-	-	-	-	
	4		5 ^a		-	3	-	-	-	-	
	4		10 ^a		-	-	-	5.7	-	-	
* V _{CE(sat)}			2 ^a	0.2	-	1	-	-	-	-	V
			3 ^a	0.3	-	-	-	1	-	0.5	
			5 ^a	0.63	-	2	-	-	-	-	
			10 ^a	2	-	-	-	5	-	-	
I _{sb}	67		1.5		1	-	-	-	-	-	s
	78		1.5		-	-	1	-	-	-	
	100		1.5		-	-	-	1	-	-	
* h _{fe} f = 50 kHz	4		0.5		4	-	-	-	-	-	
	4		1		-	-	-	-	2	-	
	4		2		-	-	2	-	-	-	
* h _{fe} f = 1 kHz	4		0.5		40	-	-	-	-	-	
	4		1		-	-	-	-	10	-	
	4		2		-	-	12	72	-	-	
R _{θJC}					-	1.75	-	1.5	-	1.17	°C/W

* In accordance with JEDEC registration data format JS-6 RFD-2
^a Pulse test; pulse duration = 300 μs, rep. rate = 60 Hz

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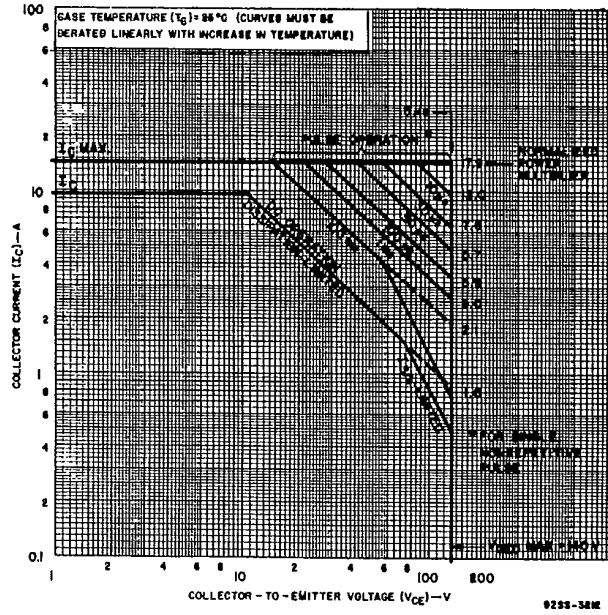


Fig. 1 — Maximum operating areas for type 2N3442.

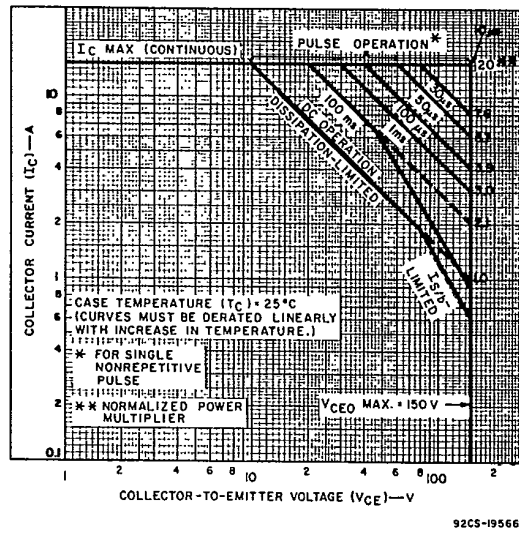


Fig. 2 — Maximum operating areas for type 2N6262.

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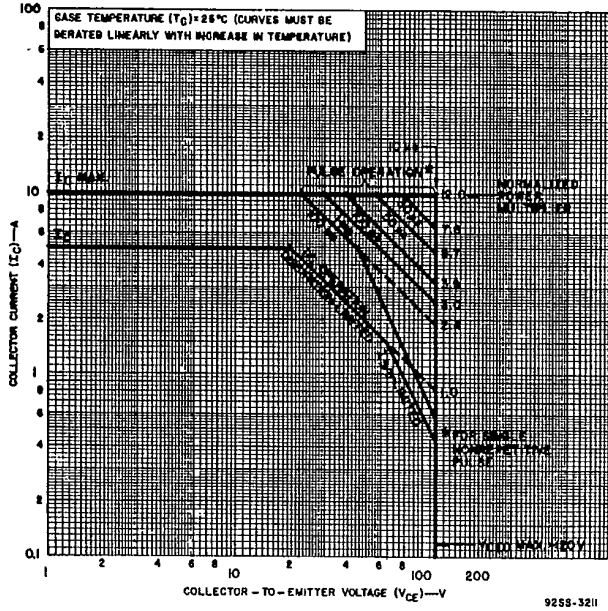


Fig. 3 — Maximum operating areas for type 2N4347.

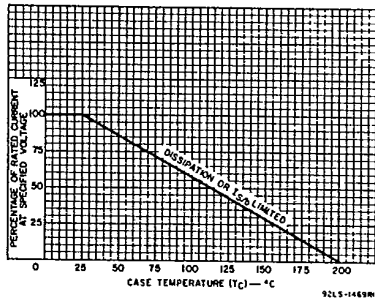


Fig. 4 — Current derating curve for all types.

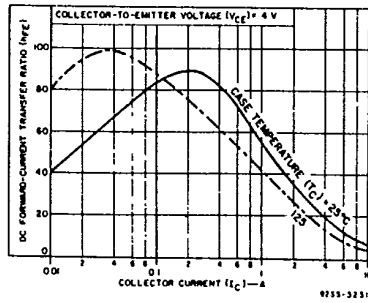


Fig. 5 — Typical dc beta characteristics for type 2N3442.

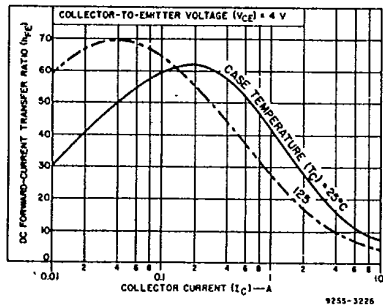


Fig. 6 — Typical dc beta characteristics for type 2N4347.

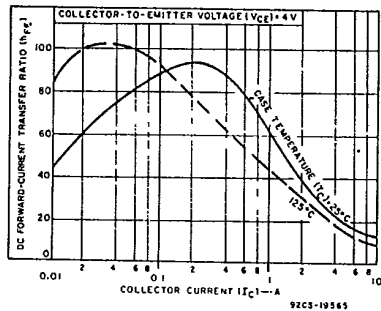


Fig. 7 — Typical dc beta characteristics for type 2N6262.

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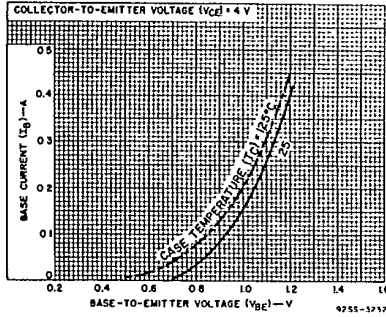


Fig. 8 — Typical input characteristics for type 2N3442.

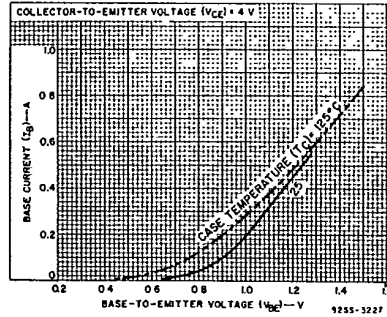


Fig. 9 — Typical input characteristics for type 2N4347.

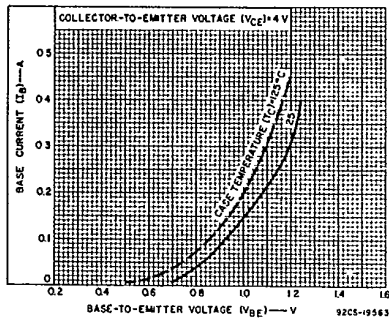


Fig. 10 — Typical input characteristics for type 2N6262.

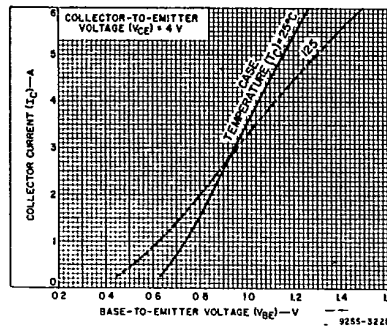


Fig. 11 — Typical transfer characteristics for type 2N3442 and 2N4347.

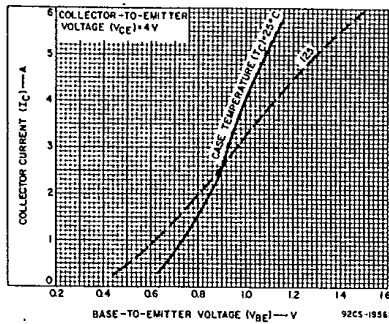


Fig. 12 — Typical transfer characteristics for type 2N6262.

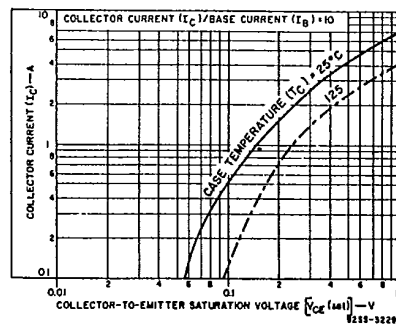


Fig. 13 — Typical saturation-voltage characteristics for all types.