

Data Sheet

Description

The 2SC2837 is an NPN transistor of 150 V, 10 A. The product has constant h_{FE} characteristics in a wide current range, providing high-quality audio sounds.

Features

- Complementary to 2SA1186
- LAPT (Linear Amplifier Power Transistor)
- High Transition Frequency
- Bare Lead Frame: Pb-free (RoHS Compliant)

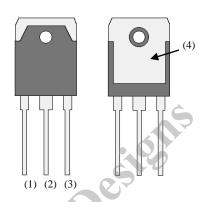
•	• V _{CEO}	150 V
•	• CEO	130 1
•	• I _C	10 A
•	• f _T	-70 MHz
_	- D	100 11

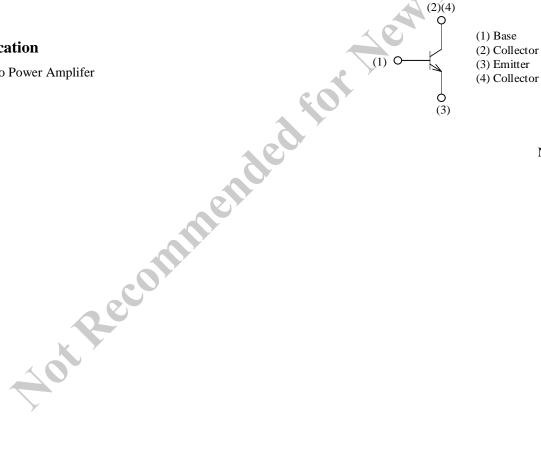
Application

• Audio Power Amplifer

Package

TO3P-3L





Not to scale

Absolute Maximum Ratings

Unless otherwise specified, $T_A = 25$ °C.

Parameter	Symbol	Conditions	Rating	Unit
Collector to Base Voltage	V_{CBO}		150	V
Collector to Emitter Voltage	V_{CEO}		150	V
Emitter to Base Voltage	$V_{\rm EBO}$		5	V
Collector Current	I_{C}		10	A
Base Current	I_B		2	A
Collector Power Dissipation	$P_{\rm C}$	$T_C = 25 ^{\circ}C$	100	W
Operating Junction Temperature	T_{J}		150	°C
Storage Temperature	T_{STG}		-55 to 150	°C

Thermal Characteristics

Unless otherwise specified, $T_A = 25$ °C.

Parameter	Symbol	Conditions	Min.	Тур.	Max.	Unit
Thermal Resistance (Junction to Case)	$R_{ heta JC}$			_	1.25	°C/W
Thermal Resistance (Junction to Ambient)	$R_{ heta JA}$		_	_	35.7	°C/W

Electrical Characteristics

Unless otherwise specified, $T_A = 25$ °C.

Parameter	Symbol	Conditions	Min.	Тур.	Max.	Unit
Collector Cut-off Current	I_{CBO}	$V_{CB} = 150 \text{ V}, I_E = 0 \text{ A}$	_	_	100	μΑ
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0 \text{ A}$	_	_	100	μΑ
Collector to Emitter Breakdown Voltage	V _{(BR)CEO}	$I_C = 25 \text{ mA}$	150			V
DC Current Gain	h_{FE}	$V_{CE} = 4 \text{ V}, I_{C} = 3 \text{ A}$	90	_	180	_
Collector to Emitter Saturation Voltage	V _{CE(sat)}	$I_C = 5 \text{ A}, I_B = 0.5 \text{ A}$	_	_	2.0	V
Transition Frequency	f_T	$V_{CE} = 12 \text{ V}, I_{E} = -1 \text{ A}$	_	70	_	MHz
Collector Output Capacitance	C_{OB}	$V_{CB} = 80 \text{ V}, I_{E} = 0 \text{ A},$ f = 1 MHz	_	60	_	pF

h_{FE} Rank

For the marking area of the rank, see the Marking Diagram.

Rank	0	р	Y
L L	50 to 100	70 to 140	90 to 180
n_{FE}	30 to 100	70 to 140	90 to 100

Rating and Characteristic Curves

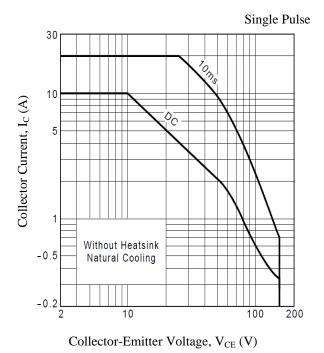
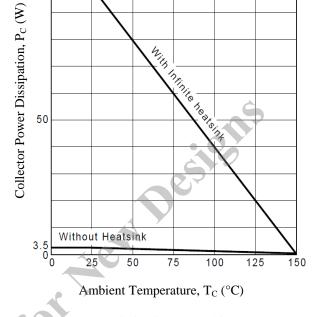


Figure 1. Safe Operating Area



100

Figure 2. Power Dissipation vs. Ambient Temperature

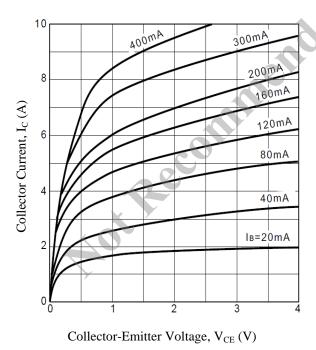


Figure 3. Collector Current vs. Collector-Emitter Voltage

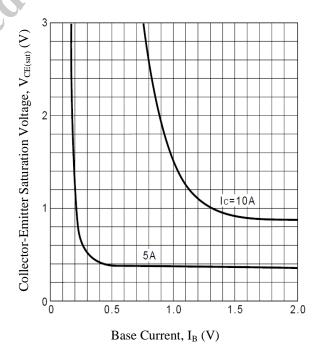


Figure 4. Collector-Emitter Saturation Voltage vs. Base Current

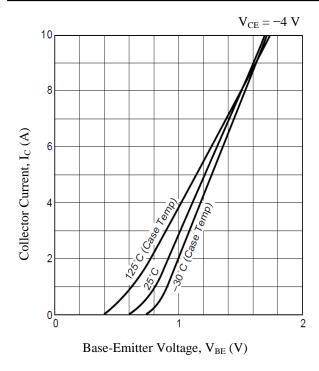


Figure 5. Collector Current vs. Base-Emitter Voltage

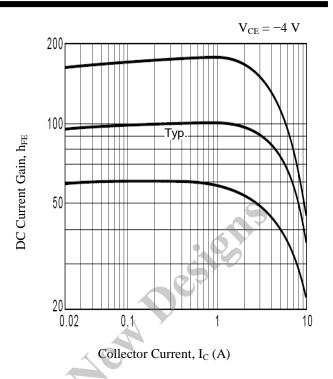


Figure 6. DC Current Gain Variation vs. Collector Current

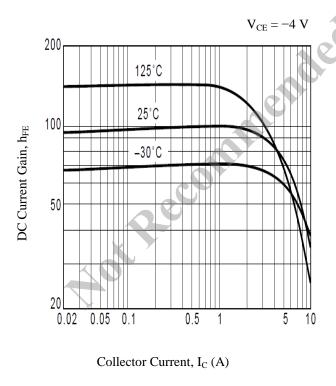


Figure 7. DC Current Gain vs. Collector Current

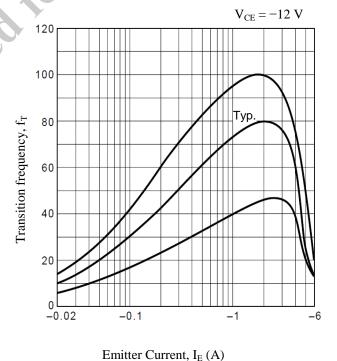
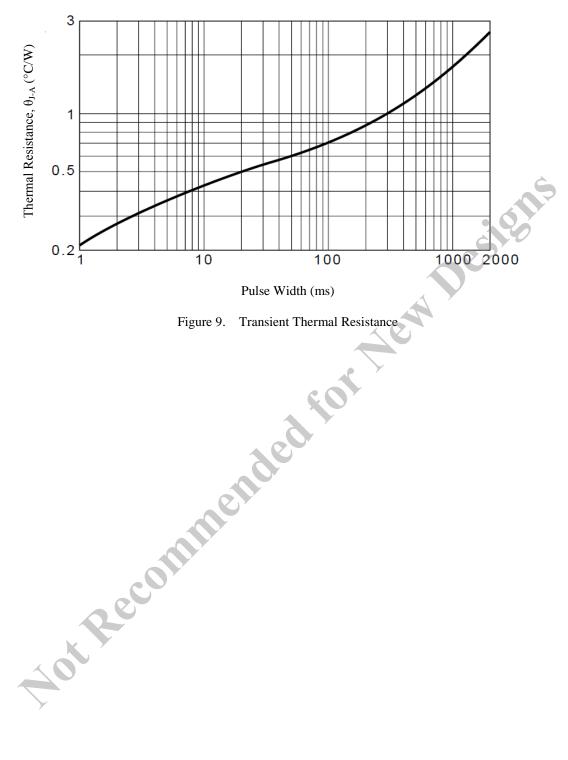
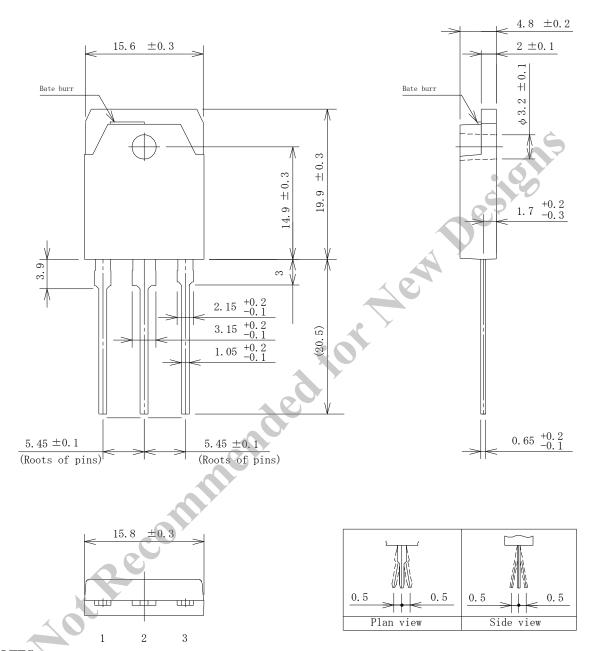


Figure 8. Transition Frequency vs. Emitter Current



Physical Dimensions

• TO3P-3L



NOTES:

- Gate burr: 0.3 mm (max.)
- All dimensions in millimeters
- Bare lead frame: Pb-free (RoHS compliant)
- When soldering the product, be sure to minimize the working time within the following limits:

 260 ± 5 °C 10 ± 1 s, 2 times (flow)

 380 ± 10 °C 3.5 ± 0.5 s, 1 time (soldering iron)

- Soldering should be at a distance of at least 1.5 mm from the body of the product.
- The recommended screw torque for TO3P: 0.686 N·m to 0.882 N·m (7 kgf·cm to 9 kgf·cm)

Marking Diagram

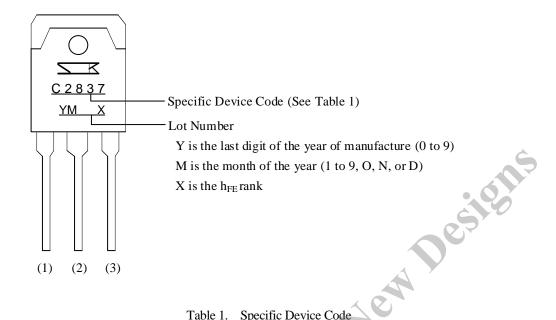


Table 1. Specific Device Code

	Specific Device Code	Part Number
	C2837	2SC2837
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