

D44H11FP D45H11FP

Complementary power transistors

Features

- Low collector-emitter saturation voltage
- Fast switching speed

Applications

- Power amplifier
- Switching circuits

Description

These low voltage transistors are housed in fully isolated TO-220FP packages and form a complementary pair. They are manufactured in multi epitaxial planar technology for general purpose in linear and switching applications.

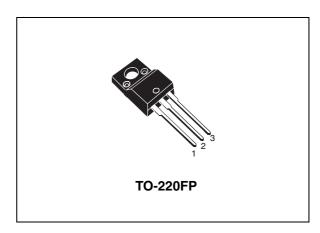


Figure 1. Internal schematic diagram

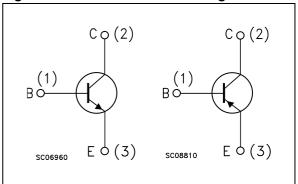


Table 1. Device summary

Order codes	Marking	Polarity	Package	Packaging
D44H11FP	D44H11FP	NPN	TO-220FP	Tube
D45H11FP	D45H11FP	PNP	TO-220FP	Tube

1 Absolute maximum ratings

Table 2. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V _{CEO}	Collector-emitter voltage (I _B = 0)	80	V
V _{EBO}	Emitter-base voltage (I _C = 0)	5	V
I _C	Collector current	10	Α
I _{CM}	Collector peak current	20	Α
P _{TOT}	Total dissipation at T _{case} = 25 °C	36	W
T _{STG}	Storage temperature	-55 to 150	°C
T _J	Max. operating junction temperature	150	°C

Note: For PNP types voltage and current values are negative.

Table 3. Thermal data

Symbol	Parameter	Value	Unit
R _{thJC}	Thermal resistance junction-case max	3.5	°C/W
R _{thJA}	Thermal resistance junction-ambient max	62.5	°C/W

2 Electrical characteristics

 T_{case} = 25 °C; unless otherwise specified.

Table 4. Electrical characteristics

Symbol	Parameter	Test con	ditions	Min.	Тур.	Max.	Unit
V _{CEO(sus)} ⁽¹⁾	Collector-emitter sustaining voltage (I _B = 0)	I _C = 30 mA		80	-		٧
I _{CES}	Collector cut-off current (V _{BE} = 0)	V _{CE} = 80 V			-	10	μΑ
I _{EBO}	Emitter cut-off current (I _C = 0)	V _{EB} = 5 V			-	50	μΑ
V _{CE(sat)} ⁽¹⁾	Collector-emitter saturation voltage	I _C = 8 A	I _B = 0.4 A		-	1	V
V _{BE(sat)} ⁽¹⁾	Base-emitter saturation voltage	I _C = 8 A	I _B = 0.8 A		1	1.5	٧
h _{FE} ⁽¹⁾	DC current gain	I _C = 2 A	V _{CE} = 1 V	60	-		
		I _C = 4 A	V _{CE} = 1 V	40	-	_	

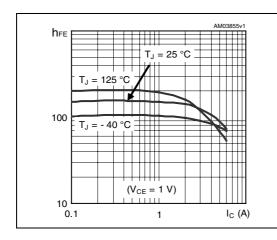
^{1.} Pulse test: pulse duration \leq 300 μ s, duty cycle \leq 2 %.

Note: For PNP types voltage and current values are negative.

Electrical characteristics (curves) 2.1

Figure 2. DC current gain (NPN)

Figure 3. DC current gain (PNP)



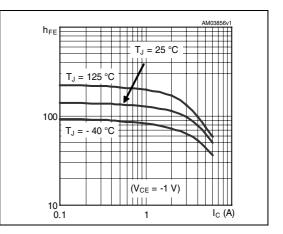
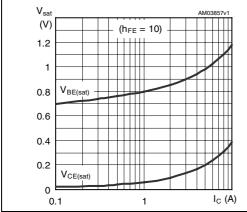
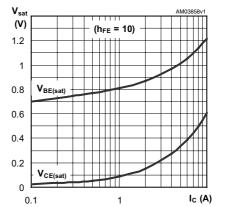


Figure 4. Saturation voltage (NPN)

Figure 5. Saturation voltage (PNP) V_{sat} (h_{FE} = 10) (V) 1.2 1





3 Package mechanical data

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Table 5. TO-220FP mechanical data

Dim.		mm	
	Min.	Тур.	Max.
А	4.4		4.6
В	2.5		2.7
D	2.5		2.75
E	0.45		0.7
F	0.75		1
F1	1.15		1.70
F2	1.15		1.70
G	4.95		5.2
G1	2.4		2.7
Н	10		10.4
L2		16	
L3	28.6		30.6
L4	9.8		10.6
L5	2.9		3.6
L6	15.9		16.4
L7	9		9.3
Dia	3		3.2

A B Dia L6 F1 F2 F G G1 G1 T012510_Rev_K

Figure 6. TO-220FP drawing

4 Revision history

Table 6. Document revision history

Date	Revision	Changes
06-Aug-2009	1	Initial release.
22-Oct-2009	2	Document status promoted from preliminary data to datasheet, updated Ic current value on <i>Table 2: Absolute maximum ratings</i> , inserted new <i>Section 2.1: Electrical characteristics (curves)</i> and updated package mechanical data (see <i>Table 5</i> and <i>Figure 6</i>)
11-Mar-2011	3	Updated V _{CE(sat)} and V _{BE(sat)} maximum values on <i>Table 4: Electrical characteristics</i>

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