

Plastic-Encapsulate Transistors

NPN Silicon Transistor

The FTD1616F / FTD1616AF are designed for use in driver and output stages of AF amplifier general purpose application.

The transistor is subdivided into three groups R, O and Y, according to its DC current gain



1. Base 2. Collector 3. Emitter
SOT-89 Plastic Package

FEATURES

- Low collector saturation voltage
- High break down voltage
- High total power dissipation

MARKING: FTD1616F:1616

FTD1616AF:1616A

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter		Symbol	Value	Unit
Collector Base Voltage	FTD1616F	V_{CBO}	60	V
	FTD1616AF		120	
Collector Emitter Voltage	FTD1616F	V_{CEO}	50	V
	FTD1616AF		60	
Emitter Base Voltage		V_{EBO}	6	V
Collector Current (DC)		I_C	1	A
Collector Current (pulse) ¹⁾		I_C	2	A
Power Dissipation		P_{tot}	0.5	W
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_s	-55 to +150	$^\circ\text{C}$

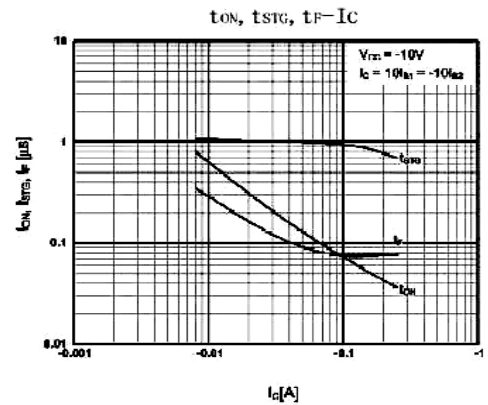
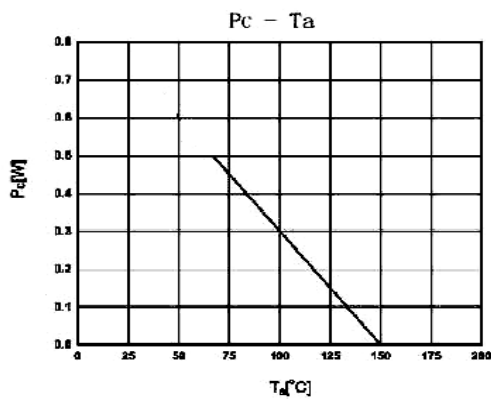
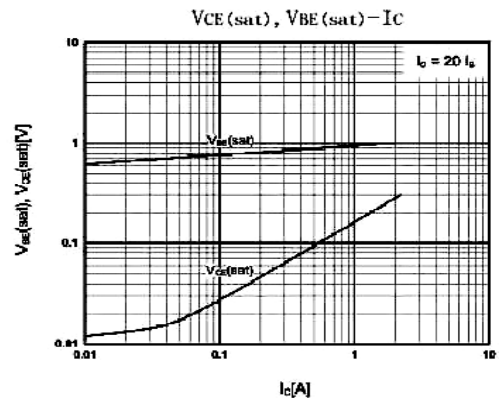
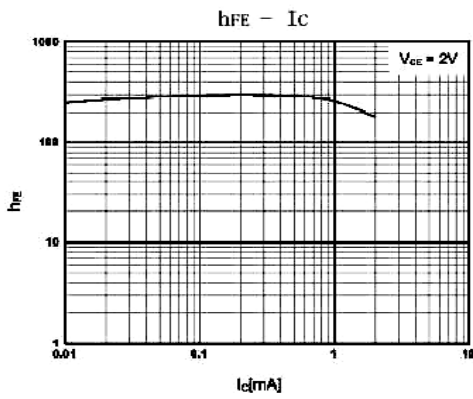
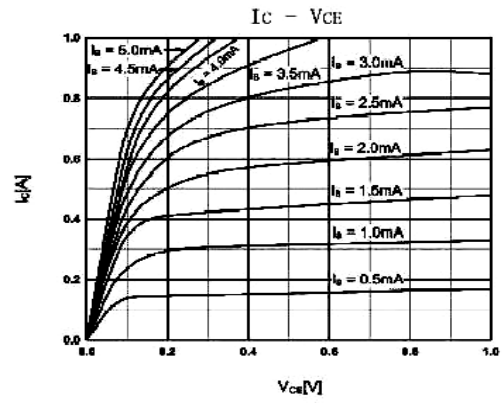
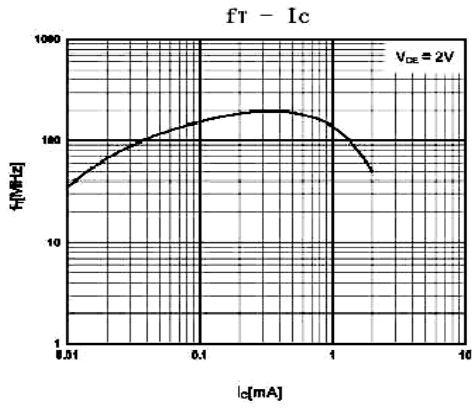
1) $PW \leq 10\text{ms}$, Duty Cycle $\leq 50\%$



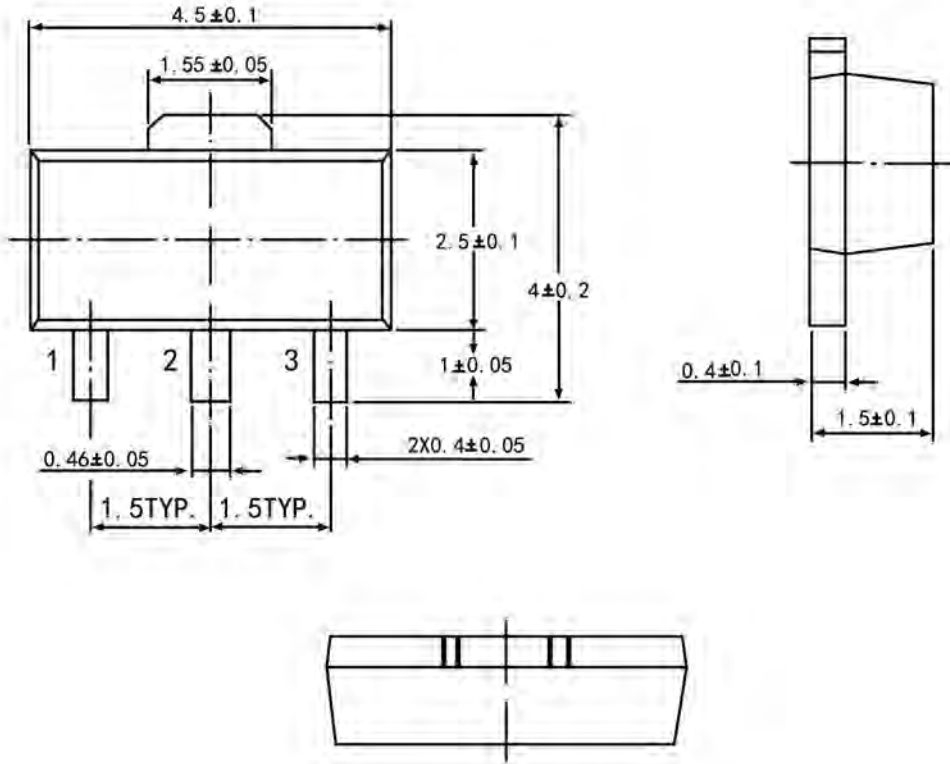
FTD1616F/AF

Characteristics at $T_{amb}=25^{\circ}\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain ²⁾ at $V_{CE}=2\text{V}$, $I_C=100\text{mA}$	R	h_{FE}	135	-	270	-
	O	h_{FE}	200	-	400	-
	Y	h_{FE}	300	-	600	-
		h_{FE}	81	-	-	-
at $V_{CE}=2\text{V}$, $I_C=1\text{A}$						
Base Emitter Voltage ²⁾ at $V_{CE}=2\text{V}$, $I_C=50\text{mA}$	V_{BE}	600		700	mV	
Collector Cutoff Current at $V_{CB}=60\text{V}/120\text{V}$	I_{CBO}	-	-	100	nA	
Emitter Cutoff Current at $V_{EB}=6\text{V}$	I_{EBO}	-	-	100	nA	
Collector Saturation Voltage ²⁾ at $I_C=1\text{A}$, $I_B=50\text{mA}$	$V_{CE(sat)}$	-	0.15	0.3	V	
Base Saturation Voltage ²⁾ at $I_C=1\text{A}$, $I_B=50\text{mA}$	$V_{BE(sat)}$	-	0.9	1.2	V	
Gain Bandwidth Product at $V_{CE}=2\text{V}$, $I_C=-100\text{mA}$	f_T	100	160	-	MHz	
Output Capacitance at $V_{CB}=10\text{V}$, $f=1\text{MHz}$	C_{OB}	-	19	-	pF	
Turn-on Time	at $V_{CC}=10\text{V}$, $I_C=-100\text{mA}$ $I_{B1}=-I_{B2}=10\text{mA}$ $V_{BE(off)}=-2\text{ to }3\text{V}$	t_{on}	-	0.07	-	μs
Storage Time		t_{stg}	-	0.95	-	μs
Fall Time		t_f	-	0.07	-	μs
2) Pulsed PW $\leq 350\mu\text{s}$, Duty Cycle $\leq 2\%$						



SOT-89 PACKAGE OUTLINE



Symbol	Dimension in Millimeters	
	Min	Max
A	1.40	1.60
B	0.44	0.62
B1	0.35	0.54
C	0.35	0.44
D	4.40	4.60
D1	1.62	1.83
E	2.29	2.60
e	1.50 Typ	
H	3.94	4.25
H1	2.63	2.93
L	0.89	1.20
All Dimensions in mm		