

Plastic-Encapsulate Transistors

NPN Silicon Transistor

The FTD1616F 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: 1616

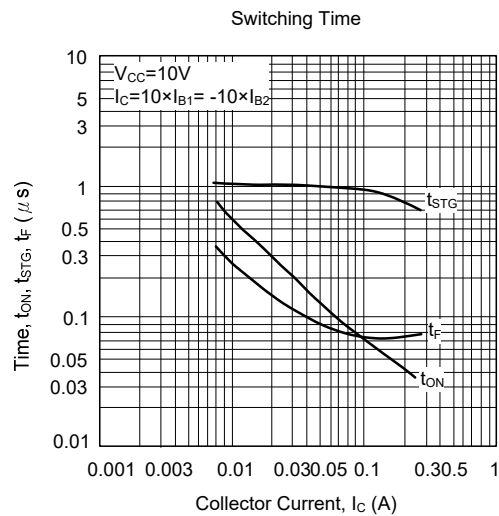
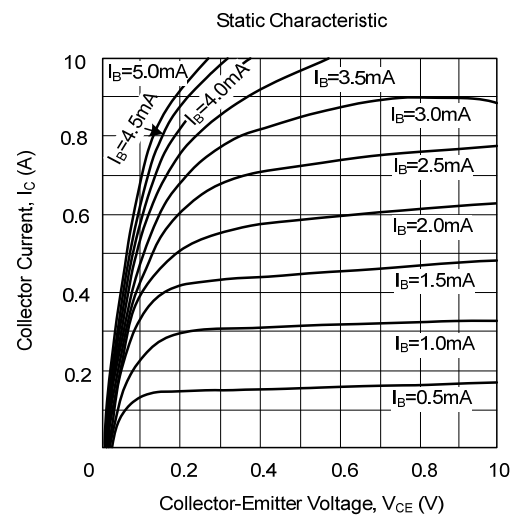
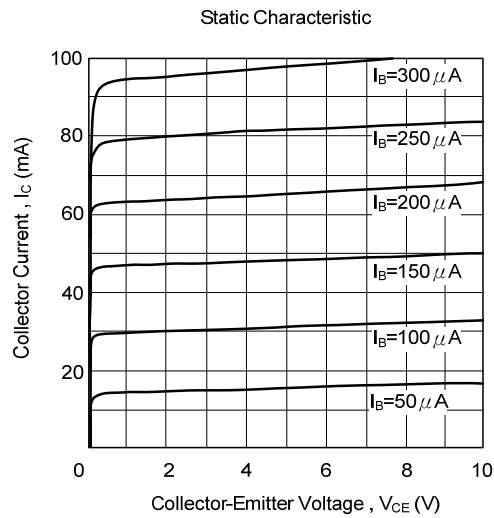
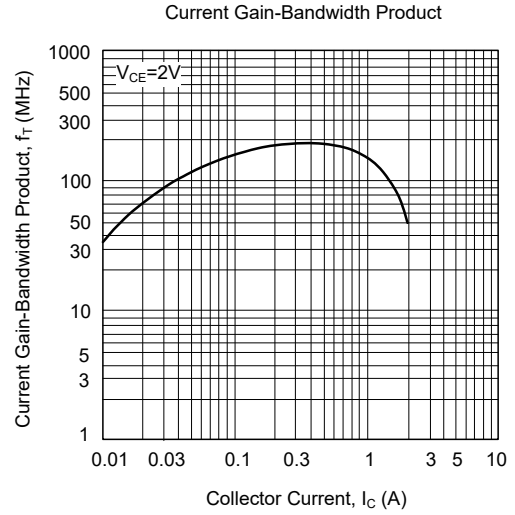
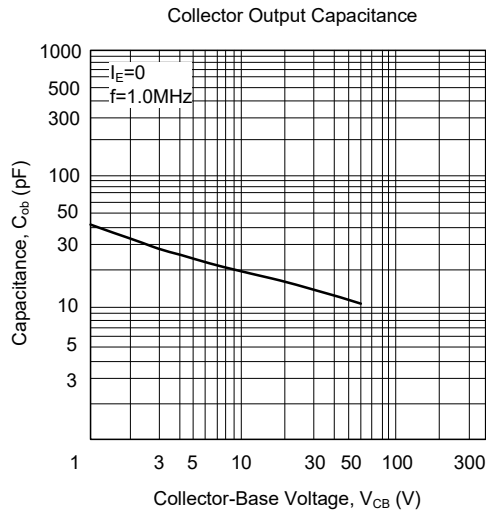
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	120	V
Collector Emitter Voltage	V_{CEO}	60	V
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 $\leq 50\%$			

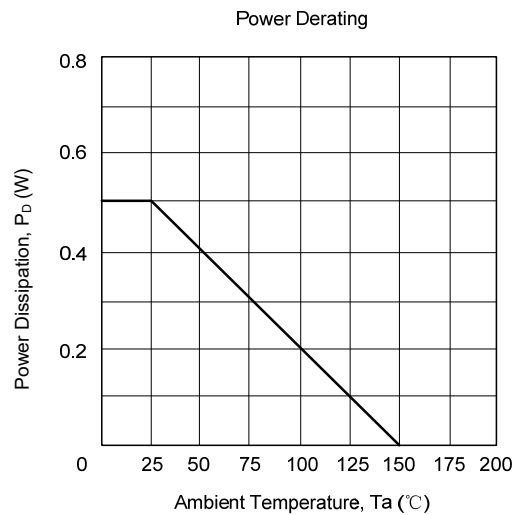
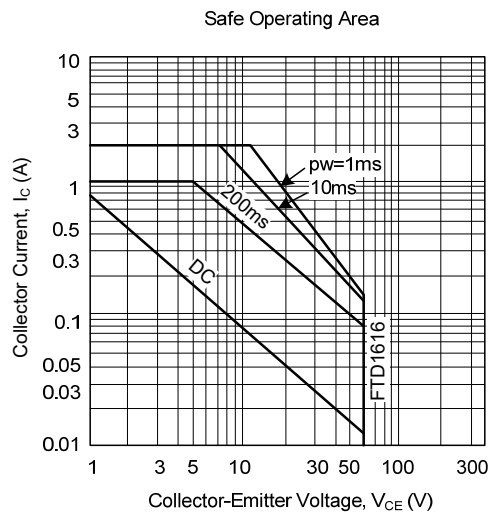
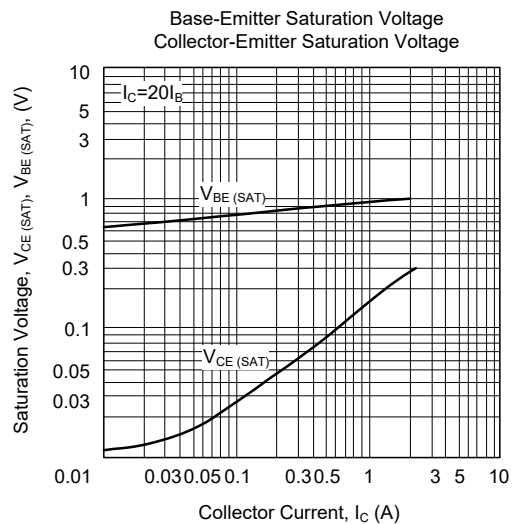
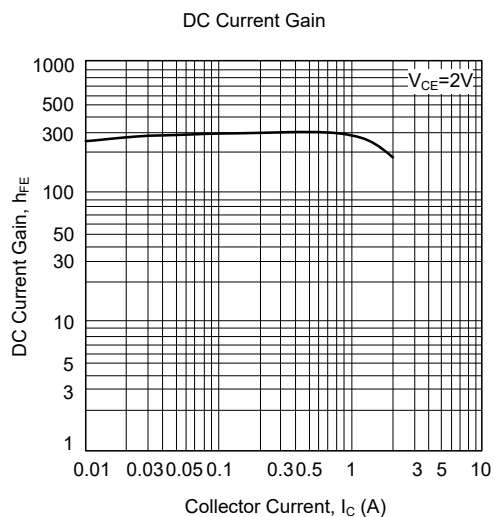
Characteristics at $T_{amb}=25^{\circ}\text{C}$

Parameter		Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain ²⁾ at V _{CE} =2V, I _C =100mA		R O Y	h _{FE}	135	-	270	-
			h _{FE}	200	-	400	-
			h _{FE}	300	-	600	-
at V _{CE} =2V, I _C =1A			h _{FE}	81	-	-	-
Base Emitter Voltage ²⁾ at V _{CE} =2V ,I _C =50mA		V _{BE}	600		700	mV	
Collector Cutoff Current at V _{CB} =120V		I _{CBO}	-	-	100	nA	
Emitter Cutoff Current at V _{EB} =6V		I _{EBO}	-	-	100	nA	
Collector Saturation Voltage ²⁾ at I _C =1A, I _B =50mA		V _{CE(sat)}	-	0.15	0.3	V	
Base Saturation Voltage ²⁾ at I _C =1A, I _B =50mA		V _{BE(sat)}	-	0.9	1.2	V	
Gain Bandwidth Product at V _{CE} =2V, I _C =-100mA		f _T	100	160	-	MHz	
Output Capacitance at V _{CB} =10V, f=1MHz		C _{OB}	-	19	-	pF	
Turn-on Time	at V _{CC} =10V, I _C =-100mA I _{B1} =-I _{B2} =10 mA V _{BE(off)} =-2 to 3 V	t _{on}	-	0.07	-	μs	
Storage Time		t _{stg}	-	0.95	-	μs	
Fall Time		t _f	-	0.07	-	μs	
2) Pulsed PW≤350μs, Duty Cycle≤2%							

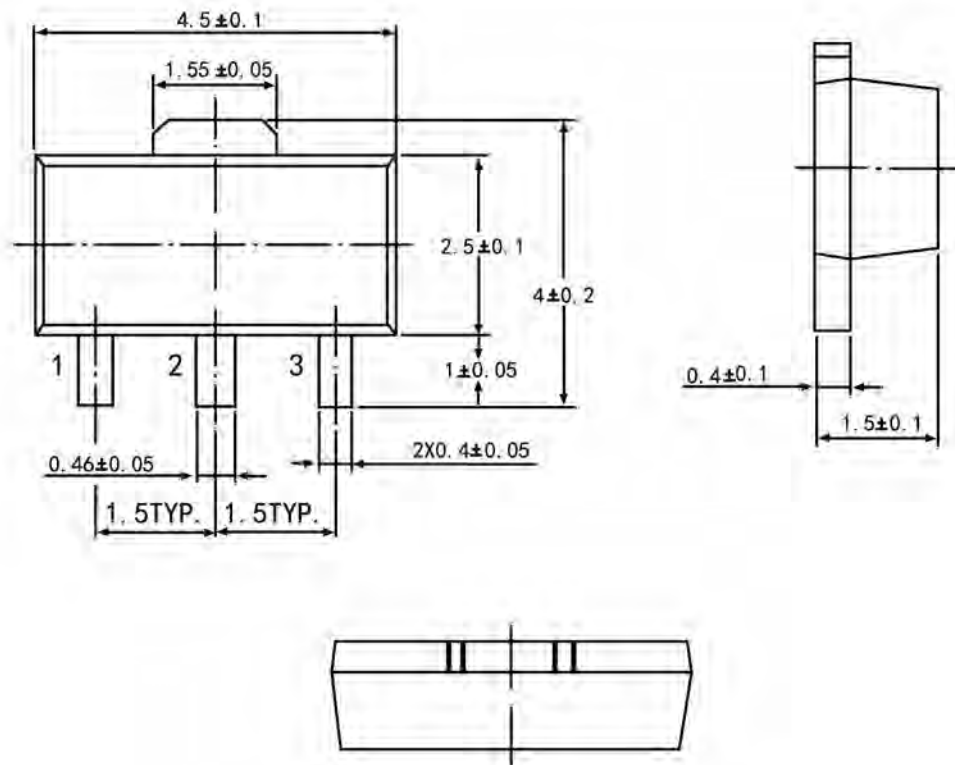
TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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		