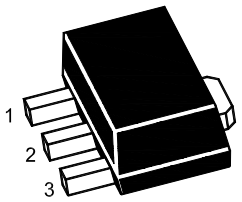
Plastic-Encapsulate Transistors

NPN Silicon Transistor

The 2SD1616U / 2SD1616AU are designed for use in driver and output stages of AF amplifier general purpose application.



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

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

FEATURES

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

MARKING: 2SD1616U:1616
2SD1616AU:1616A

Absolute Maximum Ratings (T_a = 25 °C)

Parameter		Symbol	Value	Unit
Collector Base Voltage	2SD1616U	V_{CBO}	60	V
	2SD1616AU		120	
Collector Emitter Voltage	2SD1616U	V_{CEO}	50	V
	2SD1616AU		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	℃
Storage Temperature Range		T_S	-55 to +150	℃

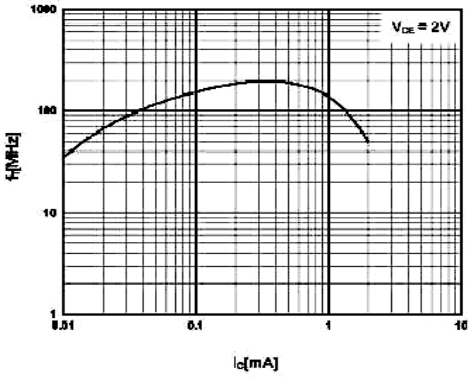
1) PW≦10ms, Duty Cycle≦50%

Characteristics at T_{amb}=25 °C

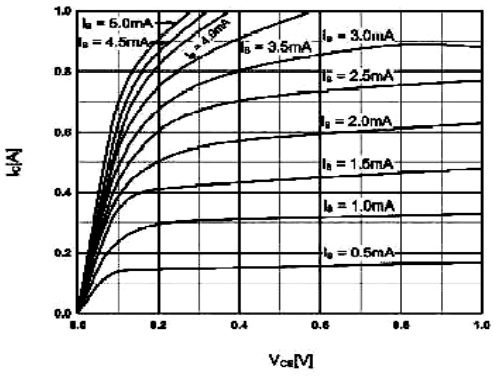
Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain [2]						
at V_{CE}=2V, I_C=100mA	R	h_{FE}	135	-	270	-
	O	h_{FE}	200	-	400	-
	Y	h_{FE}	300	-	600	-
at V_{CE}=2V, I_C=1A		h_{FE}	81	-	-	-
Base Emitter Voltage [2]						
at V_{CE}=2V ,I_C=50mA		V_{BE}	600		700	mV
Collector Cutoff Current						
at V_{CB}=60V/120V		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	t_{on}	-	0.07	-	μs
Storage Time	I_{B1}=-I_{B2}=10 mA	t_{stg}	-	0.95	-	μs
Fall Time	$V_{BE(off)}$=-2 to 3 V	t_f	-	0.07	-	μs

2) Pulsed PW≦350μs, Duty Cycle≦2%

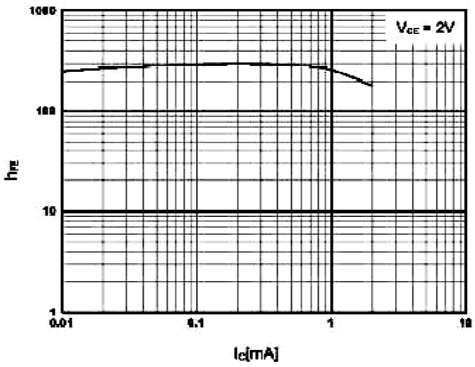
fT – Ic



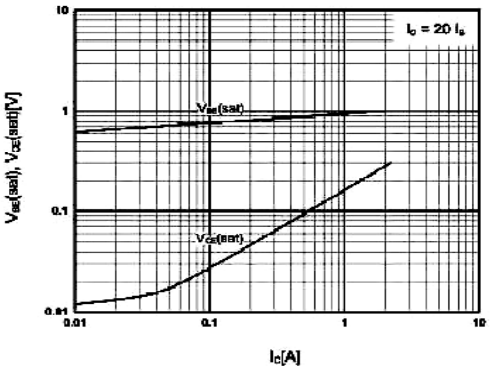
Ic – VCE



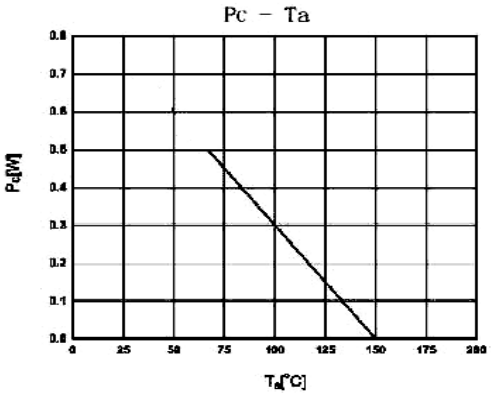
hFE – Ic



VCE(sat), VBE(sat)–Ic



Pc – Ta



tON, tSTG, tF–Ic