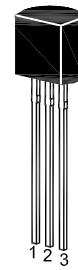


ST 2SD1616 / 2SD1616A

NPN Silicon Epitaxial Planar Transistor

The 2SD1616 / 2SD1616A 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



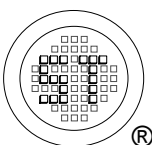
1. Emitter 2. Collector 3. Base
TO-92 Plastic Package

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

Parameter	Symbol	Value	Unit	
Collector Base Voltage	V_{CBO}	2SD1616 2SD1616A	60 120	V
Collector Emitter Voltage		V_{CEO}	2SD1616 2SD1616A	50 60
Emitter Base Voltage	V_{EBO}		6	V
Collector Current	I_C	1	A	
Peak Collector Current (PW \leq 10 ms)	I_{CP}	2	A	
Power Dissipation	P_{tot}	0.75	W	
Junction Temperature	T_j	150	$^\circ\text{C}$	
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$	

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 2\text{ V}$, $I_C = 100\text{ mA}$ at $V_{CE} = 2\text{ V}$, $I_C = 1\text{ A}$	Current Gain Group R O Y	h_{FE}	135	-	270	-
		h_{FE}	200	-	400	-
		h_{FE}	300	-	600	-
		h_{FE}	81	-	-	-
Collector Base Cutoff Current at $V_{CB} = 60\text{ V} / 120\text{ V}$	I_{CBO}	-	-	100	nA	
Emitter Base Cutoff Current at $V_{EB} = 6\text{ V}$	I_{EBO}	-	-	100	nA	
Collector Emitter Saturation Voltage at $I_C = 1\text{ A}$, $I_B = 50\text{ mA}$	$V_{CE(sat)}$	-	0.15	0.3	V	
Base Emitter Saturation Voltage at $I_C = 1\text{ A}$, $I_B = 50\text{ mA}$	$V_{BE(sat)}$	-	0.9	1.2	V	
Base Emitter Voltage at $V_{CE} = 2\text{ V}$, $I_C = 50\text{ mA}$	V_{BE}	600		700	mV	
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 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_{stg}	-	0.95	-	μs	
Fall 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_f	-	0.07	-	μs	



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