

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.

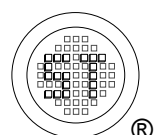
The transistor is subdivided into three groups R, O and Y, according to its DC current gain



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

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

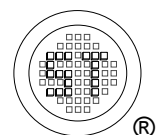
Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	60	V
2SD1616		120	
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Collector Emitter Voltage	V_{CEO}	50	V
2SD1616		60	
2SD1616A			
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_{C}	1	A
Peak Collector Current ($\text{PW} \leq 10 \text{ ms}$)	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	$^\circ\text{C}$



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

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