



MECHANICAL DATA

Dimensions in mm (inches)

6.35 (0.250) 8.64 (0.340) 3.68 (0.145) rad 3.61 (0.142) 4.08(0.161) rad (0.028) 2 11.94 (0.470) 12.70 (0.500) 0 0.71 14.48 (1.27 (0.050) 1.91 (0.750) 4.83 (0.190) 5.33 (0.210) 9.14 (0.360)

NPN BIPOLAR POWER SWITCHING TRANSISTORS

FEATURES

- FAST SWITCHING
- CECC SCREENING OPTIONS
- SPACE QUALITY LEVELS OPTIONS
- JAN LEVEL SCREENING OPTIONS

TO-66 (TO-213AA)

Underside View

1 = Base

2 = Emitter

3 = Collector

APPLICATIONS

- HIGH SPEED SWITCHING CIRCUITS
- POWER AMPLIFIERS

ABSOLUTE	MAXIMUM RATINGS (T _C = 25°C unless otherwise stated)	2N5664	2N5665
$\overline{V_{CBO}}$	Collector – Base Voltage	250V	400V
V_{CEO}	Collector – Emitter Voltage (I _B = 0)	200V	300V
V_{EBO}	Emitter – Base Voltage (I _B = 0)	6V	
I _B	Base Current	0.6A	
I _C	Collector Current	3A	
T_J , T_STG	Operating and Storage Junction Temperature Range	−65 to +200°C	
$R_{ heta JC}$	Thermal Resistance Junction to Case	3.33°C/W	
P_{D}	Power Dissipation	30W	

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ELECTRICAL CHARACTERISTICS - 2N5664 ($T_A = 25$ °C unless otherwise stated)

	Parameter		Test Conditions		Тур.	Max.	Unit
V _{CEO(sus)}	Collector – Emitter Sustaining Voltage	$I_C = 10mA$	I _B = 0	200			V
V _{CER(sus)}	Collector – Emitter Sustaining Voltage	I _C = 10mA	$R_{EB} = 100\Omega$	250			, v
I _{CES}	Collector – Emitter Cut-off Current	V _{CE} = 200V	I _B = 0			1.0	μА
		V _{CE} = 175V	T _C = 150°C			100	
I _{EBO}	Emitter Base Cut-off Current	V _{EB} = 6V	I _E = 0			10	μΑ
V _{CE(sat)}	Collector – Emitter Saturation Voltage	I _C = 3.0A	I _B = 0.3A			0.4	V
V _{BE(sat)}	Base – Emitter On Voltage	I _C = 3.0A	I _B = 0.3A			1.2	
h _{FE}	DC Current Gain	$I_{\rm C} = 0.5A$	V _{CE} = 2V	40			_
		I _C = 1.0A	V _{CE} = 5V	40		120	
		I _C = 3.0A	V _{CE} = 5V	15			
C _{obo}	Output Capacitance	$V_{CB} = 5.0V$	f = 1MHz			125	pF
[h _{fe}]	Small Signal Current Gain	$V_{CE} = 5.0V$	I _C = 0.5A	2.0			
		f = 10MHz					
t _{on}	Turn on time	I _C = 1.0A	V _{CC} = 100V		0.25		
		$I_{B1} = -I_{B2} = 30$)mA			0.20	μs
t _{off}	Turn off time	$I_C = 1.0A$	$V_{CC} = 100V$			1.5	
		$I_{B1} = -I_{B2} = 30$)mA		1.5	1.5	

¹⁾ f_t is defined as the frequency at which $|h_{fe}|$ extrapolates to untity.

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ELECTRICAL CHARACTERISTICS - 2N5665 ($T_A = 25$ °C unless otherwise stated)

	Parameter	Test Conditions		Min.	Тур.	Max.	Unit
V _{CEO(sus)}	Collector – Emitter Sustaining Voltage	$I_C = 10mA$	I _B = 0	300			V
V _{CER(sus)}	Collector – Emitter Sustaining Voltage	I _C = 10mA	$R_{EB} = 100\Omega$	400			
I _{CES}	Collector – Emitter Cut-off Current	V _{CE} = 300V	I _B = 0			1.0	μΑ
		V _{CE} = 250V	T _C = 150°C			100	
I _{EBO}	Emitter Base Cut-off Current	V _{EB} = 6V	I _E = 0			10	μΑ
V _{CE(sat)}	Collector – Emitter Saturation Voltage	I _C = 3.0A	I _B = 0.6A			0.4	V
V _{BE(sat)}	Base – Emitter On Voltage	I _C = 3.0A	I _B = 0.6A			1.2	
h _{FE}	DC Current Gain	$I_{C} = 0.5A$	V _{CE} = 2V	25			_
		I _C = 1.0A	V _{CE} = 5V	25		75	
		I _C = 3.0A	V _{CE} = 5V	15			
C _{obo}	Output Capacitance	$V_{CB} = 5.0V$	f = 1MHz			125	pF
[h _{fe}]	Small Signal Current Gain	$V_{CE} = 5.0V$	I _C = 0.5A	2.0			_
		f = 10MHz					
t _{on}	Turn on time	I _C = 1.0A	V _{CC} = 100V			0.25	μs
		$I_{B1} = -I_{B2} = 30$)mA				
t _{off}	Turn off time	I _C = 1.0A	V _{CC} = 100V			2.0	
		$I_{B1} = -I_{B2} = 30$)mA		2.0	2.0	

¹⁾ f_t is defined as the frequency at which $|h_{fe}|$ extrapolates to untity.

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