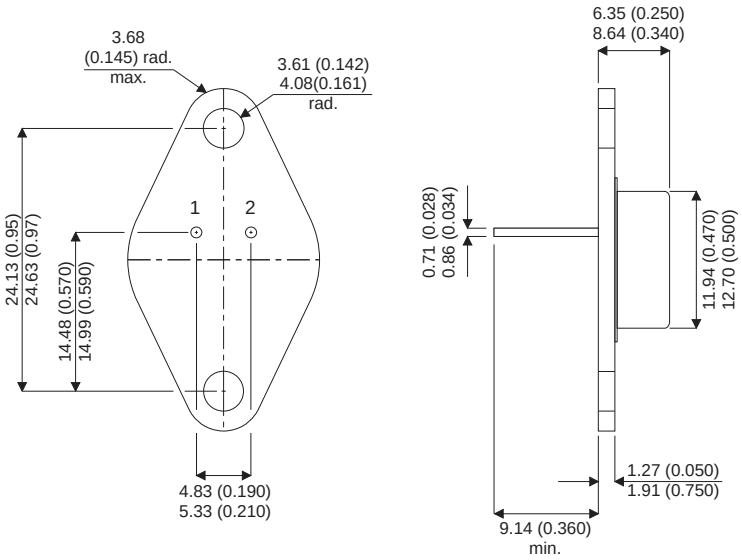
2N5664
2N5665

MECHANICAL DATA
Dimensions in mm (inches)



TO-66 (TO-213AA)

Underside View

1 = Base 2 = Emitter 3 = Collector

NPN BIPOLAR POWER SWITCHING TRANSISTORS

FEATURES

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

APPLICATIONS

- **HIGH SPEED SWITCHING CIRCUITS**
- **POWER AMPLIFIERS**

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise stated)		2N5664	2N5665
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	
$R_{\theta JC}$	Thermal Resistance Junction to Case	3.33°C/W	
P_D	Power Dissipation	30W	

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Document Number 3947
Issue 1

2N5664
2N5665

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

	Parameter	Test Conditions		Min.	Typ.	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} = 100Ω	250			
I_{CES}	Collector – Emitter Cut-off Current	V_{CE} = 200V	I_B = 0			1.0	µA
		V_{CE} = 175V	T_C = 150°C			100	
I_{EBO}	Emitter Base Cut-off Current	V_{EB} = 6V	I_E = 0			10	µA
$V_{CE(sat)}$	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_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 f = 10MHz	I_C = 0.5A	2.0			—
t_{on}	Turn on time	I_C = 1.0A I_{B1} = - I_{B2} = 30mA	V_{CC} = 100V			0.25	µs
t_{off}	Turn off time	I_C = 1.0A I_{B1} = - I_{B2} = 30mA	V_{CC} = 100V			1.5	

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

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Issue 1

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

	Parameter	Test Conditions		Min.	Typ.	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} = 100Ω	400			
I_{CES}	Collector – Emitter Cut-off Current	V_{CE} = 300V	I_B = 0			1.0	µA
		V_{CE} = 250V	T_C = 150°C			100	
I_{EBO}	Emitter Base Cut-off Current	V_{EB} = 6V	I_E = 0			10	µA
$V_{CE(sat)}$	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 f = 10MHz	I_C = 0.5A	2.0			—
t_{on}	Turn on time	I_C = 1.0A I_{B1} = - I_{B2} = 30mA	V_{CC} = 100V			0.25	µs
t_{off}	Turn off time	I_C = 1.0A I_{B1} = - I_{B2} = 30mA	V_{CC} = 100V			2.0	

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

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