NPN 2N3713 – 2N3714 – 2N3715 – 2N3716

EPITAXIAL-BASE TRANSISTORS

The 2N3713, 2N3714, 2N3715 and 2N3716 are silicon epitaxial-base NPN power transistor in Jedec TO-3 metal case. They are inteded for use in power linear and switching applications. The complementary PNP types are 2N3789, 2N3790, 2N3791 and 2N3792 respectively. Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CBO}	Collector-BaseVoltage	$I_E = 0$	2N3713	80	V
			2N3715		
			2N3714	100	
			2N3716		
V_{CEO}	Collector-Emitter Voltage	$I_B = 0$	2N3713	60	V
			2N3715		
			2N3714	80	
			2N3716		
V_{EBO}	Emitter-Base Voltage	$I_C = 0$		7.0	V
I_C	Collector Current			10	A
I_B	Base Current			4.0	A
P_D	Total Device Dissipation	@ T_C = 25°		150	W
T_J	Junction Temperature			-65 to +200	°C
T_S	Storage Temperature				

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJC}	Thermal Resistance, Junction to Case (Max)	1.17	°C/W

NPN 2N3713 – 2N3714 – 2N3715 – 2N3716

ELETRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
$V_{CEO(BR)}$	Collector-Emitter Breakdown Voltage	I_C=200 mA, I_B=0 (*)	2N3713	60	-	-	V
			2N3715				
			2N3714	80	-	-	
			2N3716				
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage (*)	I_C=200 mA, I_B=0 (*)	2N3713	60	-	-	V
			2N3715				
			2N3714	80	-	-	
			2N3716				
I_{CEO}	Collector-Emitter Current	V_{CE}=30 V, I_B=0	2N3713	-	-	0.7	mA
			2N3715				
		V_{CE}=40 V, I_B=0	2N3714	-	-	0.7	
			2N3716				
I_{CEV}	Collector Cutoff Current	V_{CE}=80 V, V_{EB}=-1.5 V	2N3713	-	-	1	mA
			2N3715				
		V_{CE}=100 V, V_{EB}=-1.5 V	2N3714	-	-	1	
			2N3716				
		V_{CE}=60 V, V_{EB}=-1.5 V T_C = 150°C	2N3713	-	-	10	
			2N3715				
		V_{CE}=80 V, V_{EB}=-1.5 V T_C = 150°C	2N3714	-	-	10	
			2N3716				
I_{EBO}	Emitter Cutoff Current	V_{BE}=7 V, I_C=0	2N3713	-	-	5	mA
			2N3714				
			2N3715				
			2N3716				
h_{FE}	DC Current Gain (*) (**)	I_C=1 A, V_{CE}=2 V	2N3713	25	-	90	-
			2N3714				
			2N3715	50	-	150	
			2N3716				
		I_C=3 A, V_{CE}=2 V	2N3713	15	-	-	
			2N3714				
			2N3715	30	-	-	
			2N3716				
		I_C=10 A, V_{CE}=4 V	2N3713	5	-	-	
			2N3714				
			2N3715				
			2N3716				
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*) (**)	I_C=5 A, I_B=0.5 A	2N3713	-	-	1	V
			2N3714				
			2N3715	-	-	0.8	
			2N3716				

NPN 2N3713 – 2N3714 – 2N3715 – 2N3716

ELETRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

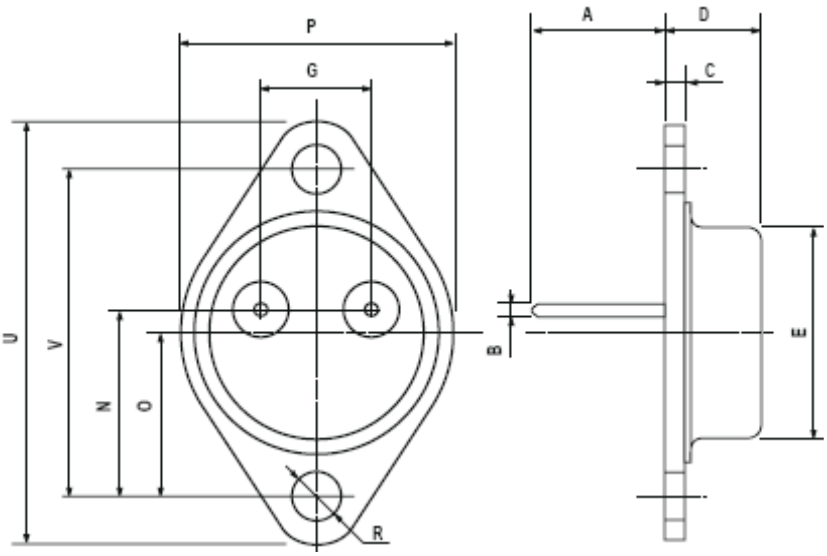
Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*) (**)	I_C=5 A, I_B=0.5 A	2N3713	-	-	2	V
			2N3714				
			2N3715	-	-	1.5	
			2N3716				
V_{BE}	Base-Emitter Voltage (*) (**)	I_C=3 A, V_{CE}=2 V	2N3713	-	-	1.5	V
			2N3714				
			2N3715				
			2N3716				
h_{fe}	Small Signal Current Gain	V_{CE}=10 V, I_C=0.5 A f=1.0 kHz	2N3713	25	-	250	-
			2N3714				
			2N3715				
			2N3716				
		V_{CE}=10 V, I_C=0.5 A f=1.0 MHz	2N3713	4	-	4	-
			2N3714				
			2N3715				
			2N3716				

(*) Pulse Width ≈ 300 μs, Duty Cycle ∠ 2.0%
(**) These parameters are measured with voltage sensing contacts separate from the current carrying contacts

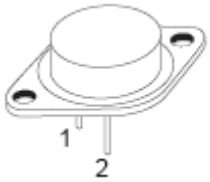
NPN 2N3713 – 2N3714 – 2N3715 – 2N3716

MECHANICAL DATA CASE TO-3

DIMENSIONS (mm)		
	min	max
A	11	13.10
B	0.97	1.15
C	1.5	1.65
D	8.32	8.92
F	19	20
G	10.70	11.1
N	16.50	17.20
P	25	26
R	4	4.09
U	38.50	39.30
V	30	30.30



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector



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