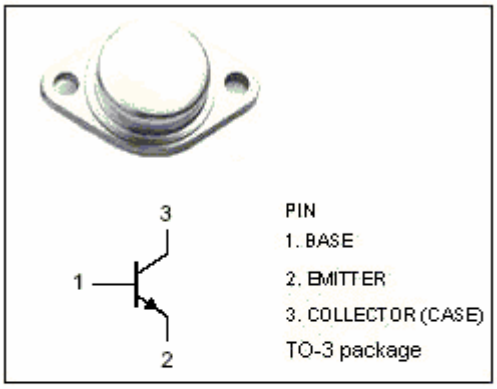
isc Silicon NPN Power Transistors 2N3715/3716

DESCRIPTION

- DC Current Gain-
  : h_{FE}= 50-150@I_C= 1A
- Wide Area of Safe Operation
- Low Collector Saturation Voltage-
  : $V_{CE(sat)}$= 0.8V(Max.)@ I_C= 5A
- Complement to Type 2N3791/3792

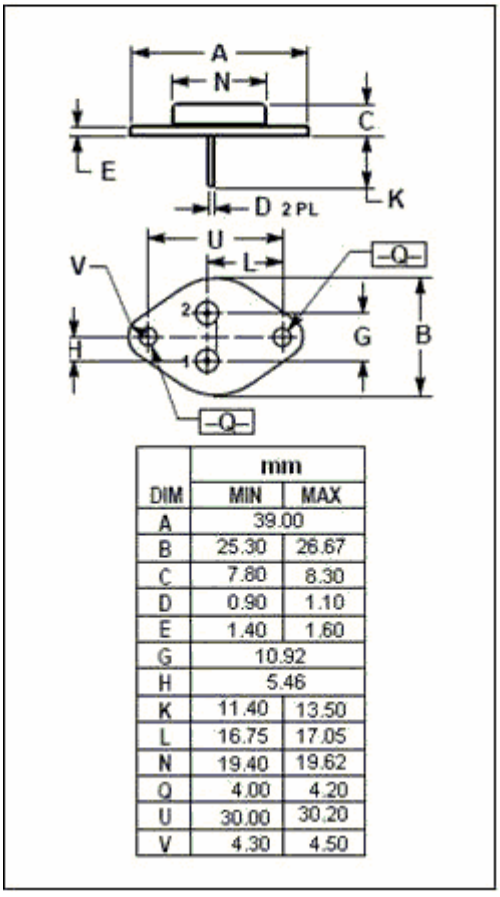


APPLICATIONS

- Designed for medium-speed switching and amplifier applications

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CBO}	Collector-Base Voltage	2N3715	80	V
		2N3716	100	
V_{CEO}	Collector-Emitter Voltage	2N3715	60	V
		2N3716	80	
V_{EBO}	Emitter-Base Voltage		7	V
I_C	Collector Current-Continuous		10	A
I_B	Base Current		4	A
P_C	Collector Power Dissipation@T_C=25℃		150	W
T_J	Junction Temperature		200	℃
T_{stg}	Storage Temperature		-65~200	℃



DIM	mm MIN	MAX
A	39.00	
B	25.30	26.67
C	7.80	8.30
D	0.90	1.10
E	1.40	1.60
G	10.92	
H	5.46	
K	11.40	13.50
L	16.75	17.05
N	19.40	19.62
Q	4.00	4.20
U	30.00	30.20
V	4.30	4.50

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	1.17	℃/W

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	2N3715	I_C= 200mA ; I_B= 0	60			V
		2N3716		80			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		I_C= 5A; I_B= 0.5A			0.8	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		I_C= 5A; I_B= 0.5A			1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage		I_C= 3A ; V_{CE}= 2V			1.5	V
I_{CEX}	Collector Cutoff Current	2N3715	V_{CE}= 80V; $V_{BE(off)}$= -1.5V V_{CE}= 60V; $V_{BE(off)}$= -1.5V, T_C=150℃			1.0 10	mA
		2N3716	V_{CE}= 100V; $V_{BE(off)}$= -1.5V V_{CE}= 80V; $V_{BE(off)}$= -1.5V, T_C=150℃			1.0 10	
I_{EBO}	Emitter Cutoff Current		V_{EB}= 7V; I_C= 0			5.0	mA
h_{FE-1}	DC Current Gain		I_C= 1A ; V_{CE}= 2V	50		150	
h_{FE-2}	DC Current Gain		I_C= 3A ; V_{CE}= 2V	30			
f_T	Current-Gain—Bandwidth Product		I_C= 0.5A ; V_{CE}= 10V ;f_{test}= 1.0MHz	4			MHz

Switching Times

t_r	Rise Time	I_C= 5A; I_{B1}= -I_{B2}= 0.5A		0.45		μs
t_{stg}	Storage Time			0.3		μs
t_f	Fall Time			0.4		μs