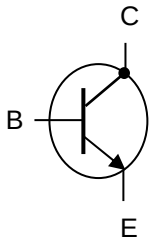
NPN 2N3439 – 2N3440

HIGH VOLTAGE TRANSISTOR

The 2N3439 and 2N3440 are high voltage silicon epitaxial transistors mounted in TO-39 metal package.
They are intended for use in power amplifier, in consumer and industrial line-operated applications.
These devices are particularity suited as drives in high voltage low current inverters, switching and series regulators.
Compliance to RoHS.



ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value		Unit
			2N3439	2N3440	
V_{CEO}	Collector-Emitter Voltage	$I_B = 0$	350	250	V
V_{CBO}	Collector-Base Voltage	$I_E = 0$	450	300	V
V_{EBO}	Emitter-Base Voltage	$I_C = 0$	7		V
I_C	Collector Current		1		A
I_B	Base Current		500		mA
P_D	Total Power Dissipation	$T_{amb} = 25°$	1		W
		$T_{case} = 25°$	10		
T_J	Junction Temperature		200		°C
T_{Stg}	Storage Temperature range		-65 to +200		

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-a}	Thermal Resistance, Junction to ambient	175	°C/W
R_{thJ-c}	Thermal Resistance, Junction to case	35	°C/W

NPN 2N3439 – 2N3440

ELECTRICAL CHARACTERISTICS

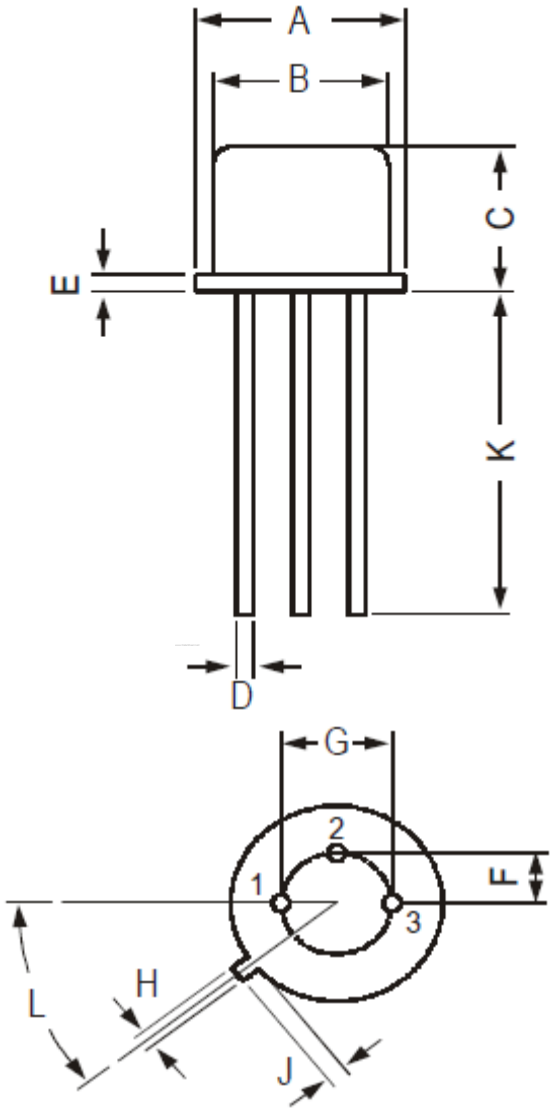
Tj=25°C unless otherwise specified

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
I_{CBO}	Collector Cutoff Current	V_{CB} = 360 V, I_E = 0	2N3439	-	-	20	µA
		V_{CB} = 250 V, I_E = 0	2N3440				
I_{CEO}	Collector Cutoff Current	V_{CE} = 300 V, I_B = 0	2N3439	-	-	20	µA
		V_{CE} = 200 V, I_B = 0	2N3440	-	-	50	
I_{CEX}	Collector Cutoff Current	V_{CE} = 450 V, V_{BE} = -1.5 V	2N3439	-	-	500	µA
		V_{CE} = 300 V, V_{BE} = -1.5 V	2N3440				
I_{EBO}	Emitter Cutoff Current	V_{BE} = 6 V, I_C = 0	2N3439	-	-	20	µA
			2N3440				
V_{CEO}	Collector-emitter Breakdown Voltage	I_C = 50 mA, I_B = 0	2N3439	350	-	-	V
			2N3440	250	-	-	
h_{FE}	DC Current Gain	I_C = 2 mA, V_{CE} = 10 V	2N3439	30	-	-	-
		I_C = 20 mA, V_{CE} = 10 V	2N3439	40	-	160	
			2N3440				
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage	I_C = 50 mA, I_B = 4 mA		-	-	0.5	V
$V_{BE(SAT)}$	Base-Emitter saturation Voltage	I_C = 50 mA, I_B = 4 mA		-	-	1.3	V
f_T	Transition frequency	I_C = 10 mA, V_{CB} = 10 V f = 5 MHz		15	-	-	MHz
C_{ob}	Output Capacitance	V_{CB} = 10 V, f = 1MHz		-	-	10	pF

NPN 2N3439 – 2N3440

MECHANICAL DATA CASE TO-39

DIMENSIONS (mm)		
	min	max
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	-	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	-
L	42°	48°



Pin 1 :	Emitter
Pin 2 :	Base
Pin 3 :	Collector
Case :	Collector

Revised August 2012