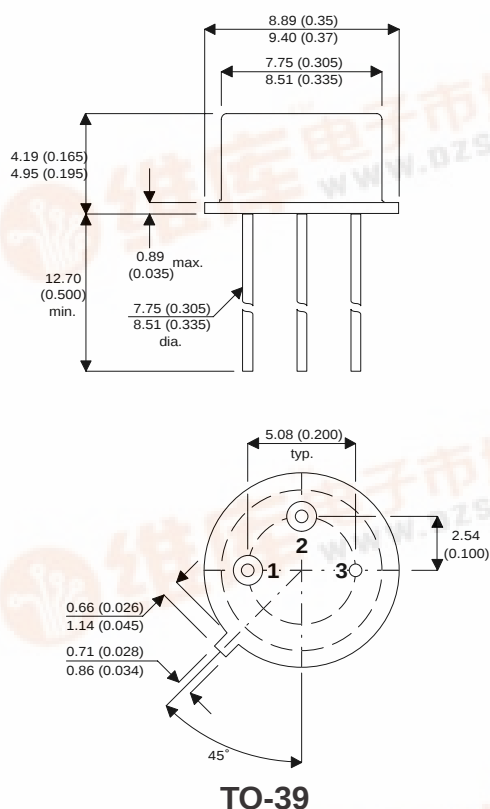
**2N5151**
2N5153**MECHANICAL DATA**

Dimensions in mm (inches)



Pin 1 – Emitter

Pin 2 – Base

Pin 3 – Collector

**HIGH SPEED
MEDIUM VOLTAGE
SWITCHES****DESCRIPTION**

The 2N5151 and the 2N5153 are silicon epitaxial planar PNP transistors in jedec TO-39 metal case intended for use in switching applications.

The complementary NPN types are the 2N5152 and 2N5154 respectively

ABSOLUTE MAXIMUM RATINGS $T_{CASE} = 25^{\circ}C$ unless otherwise stated

		2N5151	2N5153
V_{CBO}	Collector – Base Voltage	-100V	
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	-80V	
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	-5.5V	
I_C	Continuous Collector Current	-5A	
$I_{C(PK)}$	Peak Collector Current	-10A	
I_B	Base Current	-2.5A	
P_{tot}	Total Dissipation at $T_{amb} = 25^{\circ}C$	1W	
	$T_{case} = 50^{\circ}C$	10W	
	$T_{case} = 100^{\circ}C$	6.7W	
	Operating and Storage Temperature Range	-65 to +200°C	
	Junction temperature	200°C	



THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	15	°C/W
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	175	°C/W

ELECTRICAL CHARACTERISTICS FOR 2N5151 ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES} Collector Cut Off Current	$V_{CE} = -60V$ $V_{BE} = 0$			-1	μA
	$V_{CE} = -100V$ $V_{BE} = 0$			-1	mA
I_{CEV} Collector Cut Off Current	$V_{CE} = -60V$ $T_{case} = 150^{\circ}C$ $V_{BE} = 2V$			-500	μA
I_{CEO} Collector Cut Off Current	$V_{CE} = -40V$ $I_B = 0$			-50	
I_{EBO} Emitter Cut Off Current	$V_{EB} = -4V$ $I_C = 0$			-1	μA
	$V_{EB} = -5.5V$ $I_C = 0$			-1	mA
$V_{CEO(SUS)}$ Collector Emitter Saturation Voltage	$I_C = -100mA$ $I_B = 0$	80			V
$V_{CE(sat)}$ Collector Emitter Saturation Voltage	$I_C = -2.5A$ $I_B = -250mA$			-0.75	
	$I_C = -5A$ $I_B = -500mA$			-1.5	
$V_{BE(sat)}$ Base Emitter Saturation Voltage	$I_C = -2.5A$ $I_B = -250mA$ $I_C = -5A$ $I_B = -500mA$			-1.45 -2.2	
V_{BE} Base Emitter Voltage	$I_C = -2.5A$ $V_{CE} = -5V$			-1.45	
h_{FE} DC Current Gain	$I_C = -50mA$ $V_{CE} = -5V$	20			
	$I_C = -2.5A$ $V_{CE} = -5V$	30		90	
	$I_C = -5A$ $V_{CE} = -5v$	20			
	$T_{case} = -55^{\circ}C$				
	$I_C = 2.5A$ $V_{CE} = -5V$	15			
C_{CBO} Collector Base Capacitance	$I_E = 0$ $V_{CB} = -10V$ $f = 1MHz$			250	pF
h_{FE} Small Signal Current Gain	$I_C = -0.1A$ $V_{CE} = -5V$ $f = 1KHz$	20			
	$I_C = -0.5A$ $V_{CE} = -5v$ $f = 20MHz$	3			
t_{on} Turn On Time	$I_C = -5A$ $V_{CC} = 30v$ $I_{B1} = -0.5A$		0.5		μs
t_{off} Turn Off Time	$I_C = -5A$ $V_{CC} = 30V$ $I_{B1} = -I_{B2} = 0.5A$		1.3		μs

* Pulse test $t_p = 300\mu s$, $\delta < 2\%$

ELECTRICAL CHARACTERISTICS FOR 2N5153 ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES} Collector Cut Off Current	$V_{CE} = -60V$ $V_{BE} = 0$			-1	μA
	$V_{CE} = -100V$ $V_{BE} = 0$			-1	mA
I_{CEV} Collector Cut Off Current	$V_{CE} = -60V$ $T_{case} = 150^{\circ}C$ $V_{BE} = 2V$			-500	μA
I_{CEO} Collector Cut Off Current	$V_{CE} = -40V$ $I_B = 0$			-50	
I_{EBO} Emitter Cut Off Current	$V_{EB} = -4V$ $I_C = 0$			-1	μA
	$V_{EB} = -5.5V$ $I_C = 0$			-1	mA
$V_{CEO(SUS)}$ Collector Emitter Saturation Voltage	$I_C = -100mA$ $I_B = 0$	80			V
$V_{CE(sat)}$ Collector Emitter Saturation Voltage	$I_C = -2.5A$ $I_B = -250mA$			-0.75	
	$I_C = -5A$ $I_B = -500mA$			-1.5	
$V_{BE(sat)}$ Base Emitter Saturation Voltage	$I_C = -2.5A$ $I_B = -250mA$			-1.45	
	$I_C = -5A$ $I_B = -500mA$			-2.2	
V_{BE} Base Emitter Voltage	$I_C = -2.5A$ $V_{CE} = -5V$			-1.45	
h_{FE} DC Current Gain	$I_C = -50mA$ $V_{CE} = -5V$	50			
	$I_C = -2.5A$ $V_{CE} = -5V$	70		200	
	$I_C = -5A$ $V_{CE} = -5V$	40			
	$T_{case} = -55^{\circ}C$				
	$I_C = 2.5A$ $V_{CE} = -5V$	35			
C_{CBO} Collector Base Capacitance	$I_E = 0$ $V_{CB} = -10V$ $f = 1MHz$			250	pF
h_{FE} Small Signal Current Gain	$I_C = -0.1A$ $V_{CE} = -5V$ $f = 1KHz$	50			
	$I_C = -0.5A$ $V_{CE} = -5V$ $f = 20MHz$	3.5			
t_{on} Turn On Time	$I_C = -5A$ $V_{CC} = 30V$ $I_{B1} = -0.5A$		0.5		μs
t_{off} Turn Off Time	$I_C = -5A$ $V_{CC} = 30V$ $I_{B1} = -I_{B2} = 0.5A$		1.3		μs

* Pulse test $t_p = 300\mu s$, $\delta < 2\%$