

# Transistors

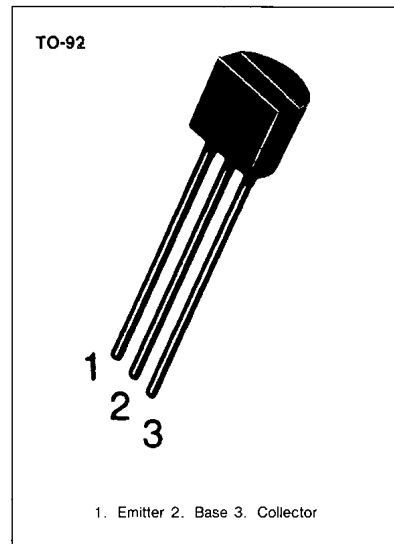
## 2N6519

### HIGH VOLTAGE TRANSISTOR

#### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	-300	V
Collector-Emitter Voltage	$V_{CEO}$	-300	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-500	mA
Base Current	$I_B$	-250	mA
Collector Dissipation	$P_C$	0.625	W
Derate above $25^\circ\text{C}$		5	mW/ $^\circ\text{C}$
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$

• Refer to 2N6520 for graphs



#### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Base Breakdown Voltage	$BV_{CBO}$	$I_C=-100\mu\text{A}, I_E=0$	-300		V
*Collector Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=-1\text{mA}, I_B=0$	-300		V
Emitter Base Breakdown Voltage	$BV_{EBO}$	$I_E=-10\mu\text{A}, I_C=0$	-5		V
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-200\text{V}, I_E=0$		-50	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-4\text{V}, I_C=0$		-50	nA
*DC Current Gain	$h_{FE}$	$V_{CE}=-10\text{V}, I_C=-1\text{mA}$	30		
		$V_{CE}=-10\text{V}, I_C=-10\text{mA}$	45		
		$V_{CE}=-10\text{V}, I_C=-30\text{mA}$	45	270	
		$V_{CE}=-10\text{V}, I_C=-50\text{mA}$	40	200	
		$V_{CE}=-10\text{V}, I_C=-100\text{mA}$	20		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-10\text{mA}, I_B=-1\text{mA}$		-0.30	V
		$I_C=-20\text{mA}, I_B=-2\text{mA}$		-0.35	V
		$I_C=-30\text{mA}, I_B=-3\text{mA}$		-0.50	V
		$I_C=-50\text{mA}, I_B=-5\text{mA}$		-1	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-10\text{mA}, I_B=-1\text{mA}$		-0.75	V
		$I_C=-20\text{mA}, I_B=-2\text{mA}$		-0.85	V
		$I_C=-30\text{mA}, I_B=-3\text{mA}$		-0.90	V
Base Emitter On Voltage	$V_{BE(on)}$	$V_{CE}=-10\text{V}, I_C=-100\text{mA}$		-2	V
*Current Gain Bandwidth Product	$f_T$	$V_{CE}=-20\text{V}, I_C=-10\text{mA}, f=20\text{MHz}$	40	200	MHz
Collector Base Capacitance	$C_{cb}$	$V_{CB}=-20\text{V}, I_E=0, f=1\text{MHz}$		6	pF
Emitter Base Capacitance	$C_{eb}$	$V_{EB}=-0.5\text{V}, I_C=0, f=1\text{MHz}$		100	pF
Turn On Time	$t_{on}$	$V_{BE(off)}=-2\text{V}, V_{CC}=-100\text{V}$ $I_C=-50\text{mA}, I_B1=-10\text{mA}$		200	ns
Turn Off Time	$t_{off}$	$V_{CC}=-100\text{V}, I_C=-50\text{mA}$ $I_B1=I_B2=-10\text{mA}$		3.5	ns

\* Pulse Test:  $PW=300\mu\text{s}$ , Duty Cycle=2%

