

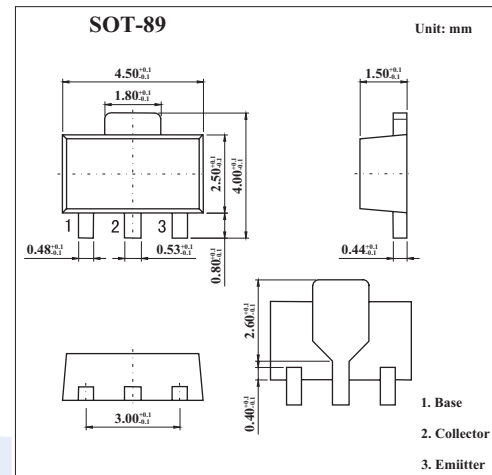
NPN Darlington Transistors

KST50; KST51; KST52

(BST50; BST51; BST52)

■ Features

- High current (max. 0.5 A)
- Low voltage (max. 80 V)
- Integrated diode and resistor.

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter		Symbol	Rating	Unit
Collector-base voltage	KST50	V_{CB0}	60	V
	KST51		80	V
	KST52		90	V
Collector-emitter voltage	KST50	V_{CEO}	45	V
	KST51		60	V
	KST52		80	V
Emitter-base voltage		V_{EBO}	5	V
Collector current (DC)		I_C	0.5	A
Peak collector current		I_{CM}	1.5	A
base current		I_B	100	mA
Power dissipation $T_{amb} \leq 25^\circ\text{C}$ *		P_D	1.3	W
Thermal resistance from junction to ambient *		$R_{th(j-a)}$	96	K/W
Thermal resistance from junction to solder point		$R_{th(j-s)}$	16	K/W
Junction temperature		T_j	150	$^\circ\text{C}$
Storage temperature		T_{stg}	-65 to +150	$^\circ\text{C}$

* Device mounted on a printed-circuit board, single sided copper, tinplated,
mounting pad for collector 6 cm^2 .

KST50; KST51; KST52 (BST50; BST51; BST52)

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter		Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	KST50	ICES	$V_{BE}=0; V_{CE}=45\text{V}$			50	nA
	KST51		$V_{BE}=0; V_{CE}=60\text{V}$			50	nA
	KST52		$V_{BE}=0; V_{CE}=80\text{V}$			50	nA
Emitter cutoff current		IEBO	$V_{EB} = 4\text{V}, I_C = 0$			50	nA
DC current gain		hFE	$I_C = 150\text{mA}; V_{CE} = 10\text{V}$	1000			
			$I_C = 500\text{mA}; V_{CE} = 10\text{V}$	2000			
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 500\text{mA}; I_B = 0.5\text{mA}$			1.3	V
			$I_C = 500\text{mA}; I_B = 0.5\text{mA}; T_J = 150^\circ\text{C}$			1.3	V
Base to emitter saturation voltage		$V_{BE(sat)}$	$I_C = 500\text{mA}; I_B = 0.5\text{mA}$			1.9	V
turn-on time		t_{on}	$I_{Con} = 500\text{mA}; I_{Bon} = 0.5\text{mA};$		400		ns
turn-off time		t_{off}	$I_{Boff} = -0.5\text{mA}$		1500		ns
Transition frequency		f_T	$I_C = 500\text{mA}; V_{CE} = 5\text{V}; f = 100\text{MHz}$		200		MHz

■ Marking

NO.	KST50	KST51	KST52
Marking	AS1	AS2	AS3