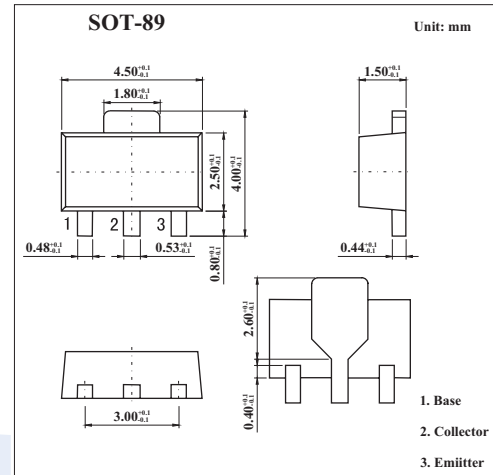


## NPN Darlington Transistors

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	60	V
	KST51	80	V
	KST52	90	V
Collector-emitter voltage	KST50	45	V
	KST51	60	V
	KST52	80	V
Emitter-base voltage	VEBO	5	V
Collector current (DC)	Ic	0.5	A
Peak collector current	ICM	1.5	A
base current	IB	100	mA
Power dissipation $T_{amb} \leq 25^\circ\text{C}^*$	PD	1.3	W
Thermal resistance from junction to ambient *	Rth(j-a)	96	K/W
Thermal resistance from junction to solder point	Rth(j-s)	16	K/W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-65 to +150	°C

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

## 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	$V_{BE}=0; V_{CE}=45V$			50	nA
	KST51	$V_{BE}=0; V_{CE}=60V$			50	nA
	KST52	$V_{BE}=0; V_{CE}=80V$			50	nA
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 4V, I_C = 0$			50	nA
DC current gain	$h_{FE}$	$I_C = 150\text{mA}; V_{CE} = 10V$	1000			
		$I_C = 500\text{mA}; V_{CE} = 10V$	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	$f_T$	$I_C = 500\text{mA}; V_{CE} = 5V; f = 100\text{MHz}$		200		MHz

### ■ Marking

NO.	KST50	KST51	KST52
Marking	AS1	AS2	AS3