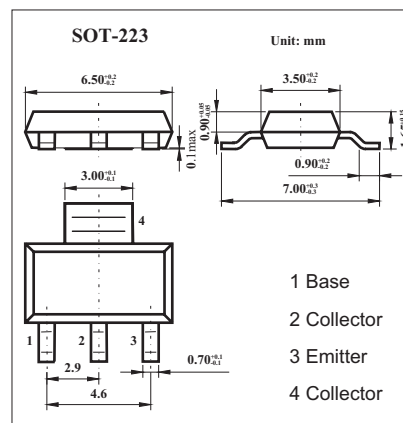


NPN Switching Transistor

KZT2222A

■ Features

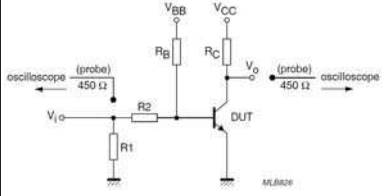
- High current (max. 600 mA)
- Low voltage (max.40 V).



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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	75	V
Collector-emitter voltage	V_{CE0}	40	V
Emitter-base voltage	V_{EB0}	6	V
Collector current	I_C	600	mA
Peak collector current	I_{CM}	800	mA
Peak base current	I_{BM}	200	mA
Total power dissipation $T_a \leq 25^\circ\text{C}$	P_{tot}	1	W
Storage temperature	T_{stg}	-65 to +150	$^\circ\text{C}$
Junction temperature	T_j	150	$^\circ\text{C}$
Operating ambient temperature	T_{amb}	-65 to +150	$^\circ\text{C}$
Thermal resistance from junction to ambient	$R_{th(j-a)}$	109	K/W
Thermal resistance from junction to soldering point	$R_{th(j-s)}$	28	K/W

KZT2222A■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$I_E = 0; V_{CB} = 60\text{ V}$			10	nA
		$I_E = 0; V_{CB} = 60\text{ V}; T_j = 125^\circ\text{C}$			10	μA
Emitter cutoff current	I_{EBO}	$I_C = 0; V_{EB} = 5\text{ V}$			10	nA
DC current gain	h_{FE}	$I_C = 0.1\text{ mA}; V_{CE} = 10\text{ V}$	35			
		$I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$	50			
		$I_C = 10\text{ mA}; V_{CE} = 10\text{ V}$	75			
		$I_C = 10\text{ mA}; V_{CE} = 10\text{ V}; T_a = -55^\circ\text{C}$	35			
		$I_C = 150\text{ mA}; V_{CE} = 1\text{ V}^*$	50			
		$I_C = 150\text{ mA}; V_{CE} = 10\text{ V}^*$	100		300	
		$I_C = 500\text{ mA}; V_{CE} = 10\text{ V}^*$	40			
collector-emitter saturation voltage	V_{CEsat}	$I_C = 150\text{ mA}; I_B = 15\text{ mA}$			300	mV
		$I_C = 500\text{ mA}; I_B = 50\text{ mA}$			1	V
base-emitter saturation voltage	V_{BEsat}	$I_C = 150\text{ mA}; I_B = 15\text{ mA}$	0.6		1.2	V
		$I_C = 500\text{ mA}; I_B = 50\text{ mA}$			2	V
Collector capacitance	C_c	$I_E = I_C = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$			8	pF
Emitter capacitance	C_e	$I_C = I_E = 0; V_{EB} = 500\text{ mV}; f = 1\text{ MHz}$			25	pF
Turn-on time	t_{on}	$I_{Con} = 150\text{ mA}; I_{Bon} = 15\text{ mA};$ $I_{Boff} = -15\text{ mA}$			35	ns
Delay time	t_d				10	ns
Rise time	t_r				25	ns
Turn-off time	t_{off}				250	ns
Storage time	t_s				200	ns
Fall time	t_f	$V_i = 9.5\text{ V}; T = 500\text{ }\mu\text{s}; t_p = 10\text{ }\mu\text{s}; t_r = t_f \leq 3\text{ ns}.$ $R_1 = 68\text{ }\Omega; R_2 = 325\text{ }\Omega; R_B = 325\text{ }\Omega; R_C = 160\text{ }\Omega.$ $V_{BB} = -3.5\text{ V}; V_{CC} = 29.5\text{ V}.$ Oscilloscope input impedance $Z_i = 50\text{ }\Omega.$			60	ns
Transition frequency	f_T	$I_C = 20\text{ mA}; V_{CE} = 20\text{ V}; f = 100\text{ MHz}$	300			MHz

* Pulse test: $t_p \leq 300\text{ }\mu\text{s}; \delta \leq 0.02.$