

SILICON P-N-P HIGH-VOLTAGE TRANSISTORS

P-N-P high-voltage small-signal transistors, primarily intended for use in telephony applications and encapsulated in a TO-92 package.

QUICK REFERENCE DATA

		PH5415	PH5416
Collector base voltage (open emitter)	$-V_{CB0}$ max.	200	350 V
Collector-emitter voltage (open base)	$-V_{CEO}$ max.	200	300 V
Collector current	$-I_C$ max.	1,0	1,0 A
Total power dissipation up to $T_{amb} = 25\text{ }^\circ\text{C}$	P_{tot} max.	500	500 mW
Junction temperature	T_j max.	150	150 $^\circ\text{C}$
Collector-emitter saturation voltage $-I_C = 50\text{ mA}; -I_B = 5\text{ mA}$	$-V_{CEsat}$ <	0,8	0,8 V
D.C. current gain $-I_C = 50\text{ mA}; -V_{CE} = 10\text{ V}$	h_{FE} >	30	30
	<	150	120

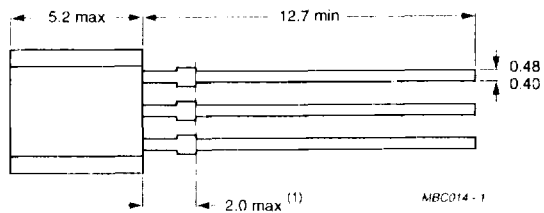
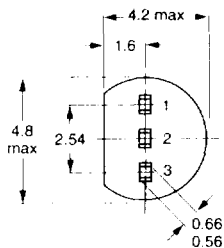
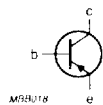
MECHANICAL DATA

Dimension in mm

Fig. 1 TO-92.

Pinning

- 1 = emitter
- 2 = base
- 3 = collector



Note (1) Terminal dimensions within this zone are uncontrolled to allow for plastic and terminal irregularities.

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

			PH5415	PH5416	
Collector base voltage (open emitter)	$-V_{CB0}$	max.	200	350	V
Collector emitter voltage (open base)	$-V_{CEO}$	max.	200	300	V
Emitter base voltage (open collector)	$-V_{EBO}$	max.	4,0	6,0	V
Collector current (d.c.)	I_C	max.	1,0		A
Base current	$-I_B$	max.	0,5		A
Total power dissipation up to $T_{amb} = 25\text{ }^\circ\text{C}$	P_{tot}	max.	500		mW
Junction temperature	T_j	max.	150		$^\circ\text{C}$
Storage temperature range	T_{stg}		-65 to 150		$^\circ\text{C}$

THERMAL RESISTANCE

From junction to ambient in free air	$R_{th\ j\ a}$		250		K/W
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CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified

			PH5415	PH5416	
Collector cut-off currents $I_E = 0; -V_{CB} = 175\text{ V}$ $I_E = 0; -V_{CB} = 280\text{ V}$	$-I_{CB0}$	\leq	0,1	0,1	μA
$I_B = 0; -V_{CE} = 150\text{ V}$ $I_B = 0; -V_{CE} = 250\text{ V}$	$-I_{CEO}$	\leq	1,0	1,0	μA
Emitter cut-off current $I_C = 0; -V_{EB} = 4\text{ V}$ $I_C = 0; -V_{EB} = 6\text{ V}$	$-I_{EBO}$	\leq	1,0	1,0	μA
Collector-emitter sustaining voltage $I_B = 0; -I_C = 50\text{ mA}$	$-V_{CEO\text{sust}}$	\geq	200	300	V
Saturation voltages $-I_C = 50\text{ mA}; -I_B = 5\text{ mA}$	$-V_{CE\text{sat}}$ $-V_{BE\text{sat}}$	\leq	0,8 1,0	0,8 1,0	V
D.C. current gain $-I_C = 50\text{ mA}; -V_{CE} = 10\text{ V}$	h_{FE}	\geq	30 150	30 120	
Transition frequency at $f = 5\text{ MHz}$ $-I_C = 10\text{ mA}; -V_{CE} = 10\text{ V}; T_{amb} = 25\text{ }^\circ\text{C}$	f_T	\geq		15	MHz
Small signal current gain at $f = 5\text{ MHz}$ $I_C = 10\text{ mA}; -V_{CE} = 10\text{ V}; T_{amb} = 25\text{ }^\circ\text{C}$	h_{fe}	\geq		25	
Real part (Re) of input impedance (h_{ie}) $V_{CE} = 10\text{ V}; -I_C = 5\text{ mA}; f = 1\text{ MHz};$ $T_{amb} = 25\text{ }^\circ\text{C}$	$Re(h_{ie})$	\leq		300	Ω
Input capacitance at $f = 1\text{ MHz}$ $I_C = 0; -V_{EB} = 5\text{ V}; T_{amb} = 25\text{ }^\circ\text{C}$	C_e	\leq		75	pF
Output capacitance at $f = 1\text{ MHz}$ $I_E = 0; -V_{CB} = 10\text{ V}; T_{amb} = 25\text{ }^\circ\text{C}$	C_c	\leq		15	pF