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)	$-V_{CBO}$	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 °C	P_{tot}	max.	500	500	mW
Junction temperature	T_j	max.	150	150	°C
Collector-emitter saturation voltage $-I_C$ = 50 mA; $-I_B$ = 5 mA	$-V_{CEsat}$	<	0,8	0,8	V
D.C. current gain $-I_C$ = 50 mA; $-V_{CE}$ = 10 V	h_{FE}	>	30	30	
		<	150	120	

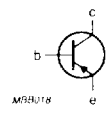
MECHANICAL DATA

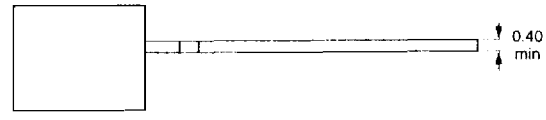
Dimension in mm

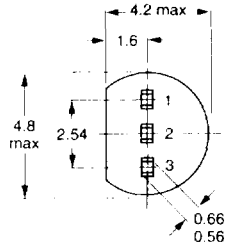
Fig. 1 TO-92.

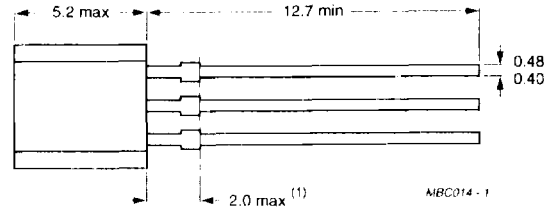
Pinning

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)	$-V_{CBO}$	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 °C	P_{tot}	max.	500		mW
Junction temperature	T_j	max.	150		°C
Storage temperature range	T_{stg}		−65 to 150		°C

THERMAL RESISTANCE

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

CHARACTERISTICS

T_j = 25 °C unless otherwise specified

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