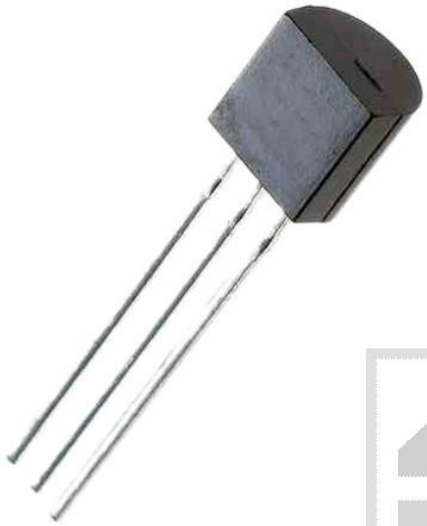
TR BC415;CEMI;TO92;tranzystor; PNP;35V;100mA;300mW



Dane techniczne:
Nazwa: BC414B
Typ tranzystora: bipolarny
Kierunek przewodnictwa: PNP
Prąd kolektora: 0.1A
Napięcie kolektor-emiter: 35V
Moc: 0.3W
Obudowa: TO92
Montaż: przewlekany (THT)
Producent: CEMI

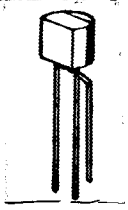
BC413 BC414 BC415 BC416

COMPLEMENTARY SILICON AF LOW NOISE SMALL SIGNAL TRANSISTORS

MICRO ELECTRONICS

THE BC413, BC414, BC415, BC416 ARE SILICON PLANAR EPITAXIAL TRANSISTORS FOR AF LOW NOISE PREAMPLIFIER APPLICATIONS, THE BC413, BC414 ARE NPN AND ARE COMPLEMENTARY TO THE PNP BC415, BC416 RESPECTIVELY.

CASE TO-92F



CEB

ABSOLUTE MAXIMUM RATINGS

For p-n-p devices, voltage and current values are negative.

		BC413 (NPN)	BC414 (NPN)	BC415 (PNP)	BC416 (PNP)
Collector-Base Voltage	V_{CBO}	45V	50V	45V	50V
Collector-Emitter Voltage	V_{CEO}	30V	45V	35V	45V
Emitter-Base Voltage	V_{EBO}	5V			
Collector Current	I_C	100mA			
Total Power Dissipation @ $T_A \leq 25^oC$	P_{tot}	300mW derate 2.4mW/°C above 25°C			
Operating Junction & Storage Temperature	T_j, T_{stg}	-55 to 150°C			

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Collector-Base Breakdown Voltage	BVCBO					I_C=10μA I_E=0
BC413		45			V	
BC414		50			V	
BC415		45			V	
BC416		50			V	
Collector-Emitter Breakdown Voltage	LV_{CEO}					I_C=10mA (Pulsed)
BC413		30			V	I_B=0
BC414		45			V	
BC415		35			V	
BC416		45			V	
Emitter-Base Breakdown Voltage	BV_{EBO}	5			V	I_E=10μA I_C=0
Collector Cutoff Current	I_{CBO}			15	nA	V_{CB}=30V I_E=0
				5	μA	V_{CB}=30V I_E=0 T_A=150°C
Emitter Cutoff Current	I_{EBO}			15	nA	V_{EB}=4V I_C=0
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.08	0.25	V	I_C=10mA I_B=0.5mA
			0.25	0.6	V	I_C=100mA I_B=5mA (Pulsed)

MICRO ELECTRONICS LTD. 38 HUNG TO ROAD, KWUN TONG, HONG KONG. TELEX 43510
KWUN TONG P. O. BOX69477 CABLE ADDRESS "MICROTRON"
TELEPHONE:- 3-430181-6 ~~3-893363, 3-892423~~
FAX: 3-410321

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Collector-Emitter Knee Voltage	V_{CEK}		0.3	0.6	V	I_C=10mA, I_B=value at which I_C=11mA V_{CE}=1V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.92		V	I_C=100mA I_B=5mA(Pulsed)
Base-Emitter Voltage	V_{BE}	0.55	0.64	0.75	V	IC=2mA V_{CE}=5V
			0.57		V	IC=0.1mA V_{CE}=5V
Current Gain-Bandwidth Product	f_T		200		MHz	I_C=10mA V_{CE}=5V
Collector-Base Capacitance	Cob					V_{CB}=10V I_E=0
BC413, BC414			2.7		pF	f=1MHz
BC415, BC416			3.2		pF	
Noise Figure	NF					I_C=0.2mA V_{CE}=5V
BC413, BC414			1.2	2.5	dB	R_G=2KΩ f=30Hz-15KHz
BC415, BC416			1.2	2.0	dB	
Flicker Noise Voltage Referred to Base	$\overline{En}$					I_C=0.2mA V_{CE}=5V
BC413, BC414				0.135	μV	R_G=2KΩ f=10Hz-50Hz
BC415, BC416				0.11	μV	

D.C. CURRENT GAIN (H_{FE}) AT V_{CE}=5V T_A=25°C

@ I_C	H_{FE} GROUP A			H_{FE} GROUP B			H_{FE} GROUP C		
	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
0.01mA	40	100		100	170		100	290	
2mA	120	170	220	180	300	460	380	520	800
100mA		100			160			270	

h - PARAMETERS AT I_C=2mA V_{CE}=5V f=1kHz T_A=25°C

h - PARAMETER	SYMBOL	H_{FE} GROUP A			H_{FE} GROUP B			H_{FE} GROUP C			UNIT
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
Input Impedance	h_{ie}	1.6	2.7	4.5	3.2	4.5	8.5	6	8.7	15	KΩ
Voltage Feedback Ratio	h_{re}		1.5			2			3		$x10^{-4}$
Small Signal Current Gain	h_{fe}	125	190	260	240	330	500	450	580	900	
Output Admittance	h_{oe}		18	30		30	60		60	110	μU