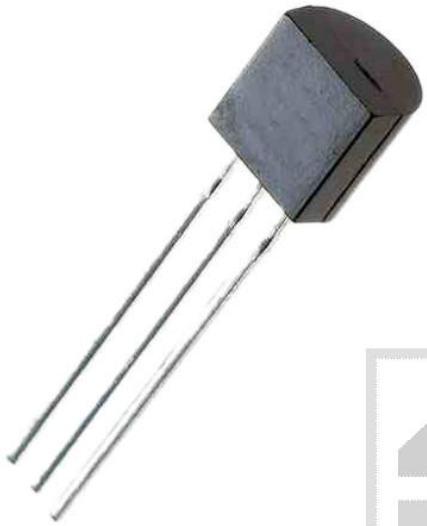
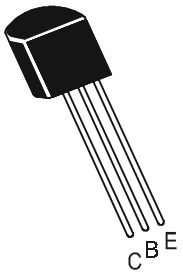
TR BC414;CEMI;TO92;tranzystor; NPN;45V;100mA;300mW



Dane techniczne:
Nazwa: BC414
Typ tranzystora: bipolarny
Kierunek przewodnictwa: NPN
Prąd kolektora: 0.1A
Napięcie kolektor-emiter: 45V
Moc: 0.3W
Obudowa: TO92
Montaż: przewlekany (THT)
Producent: CEMI

SILICON PLANAR EPITAXIAL TRANSISTORS

BC 413, B, C
BC 414, B, C



TO-92
Plastic Package

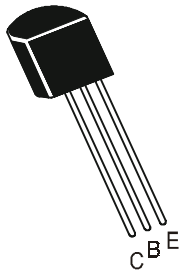
Low Noise Transistors

ABSOLUTE MAXIMUM RATINGS (Ta=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	BC 413	BC414	UNITS
Collector Emitter Voltage	V_{CEO}	30	45	V
Collector Base Voltage	V_{CBO}	45	50	V
Emitter Base Voltage	V_{EBO}	5.0		V
Collector Current Continuous	I_C	100		mA
Total Device Dissipation@ Ta=25ºC	P_D	350		mW
Derate Above 25ºC		2.8		mW/ ºC
Total Device Dissipation@ Tc=25ºC	P_D	1.0		W
Derate Above 25ºC		8.0		mW/ ºC
Operating And Storage Junction Temperature Range	T_j, T_{stg}	-55 to +150		°C
THERMAL RESISTANCE				
Junction to ambient	$R_{th(j-a)}$	357		ºC/W
Junction to case	$R_{th(j-c)}$	125		ºC/W

SILICON PLANAR EPITAXIAL TRANSISTORS

BC 413, B, C
BC 414, B, C



TO-92
Plastic Package

ELECTRICAL CHARACTERISTICS (Ta=25ºC unless specified otherwise)

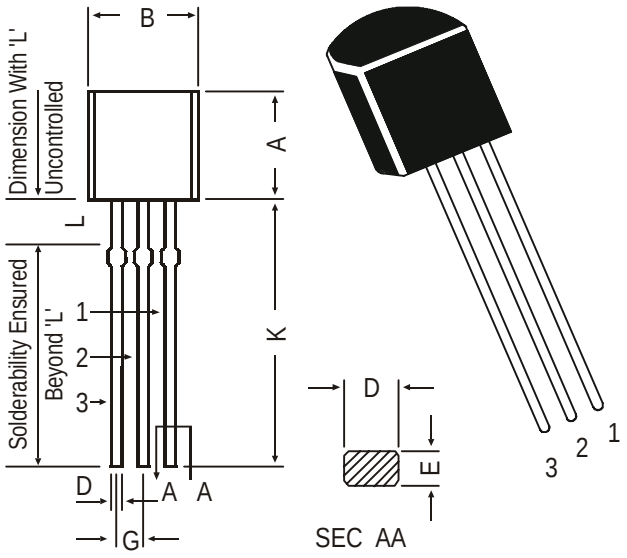
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Emitter Breakdown Voltage	BV_{CEO}	I_C=10mA,I_B=0				
BC413			30			V
BC414			45			V
Collector Base Breakdown Voltage	BV_{CBO}	I_C=10uA, I_E =0				
BC413			45			V
BC414			50			V
Emitter Base Breakdown Voltage	BV_{EBO}	I_E=10uA, I_C=0	5			V
Collector-Cut off Current	I_{CBO}	V_{CB} =30V, I_E =0			15	nA
		V_{CB} =30V, I_E =0			5	µA
		Ta = +125^{O}C				
Emitter cut off Current	I_{EBO}	V_{EB} =4V, I_C =0			15	nA
DC Current Gain	h_{FE}					
BC413B, BC414B		I_C=10uA,V_{CE}=5V	100			
BC413C, BC414C			100			
BC413B, BC414B		I_C=2mA,V_{CE}=5V	180		460	
BC413C, BC414C			380		800	
BC413, BC414			180		800	
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=10mA,I_B=0.5mA			0.25	V
		I_C=10mA,I_B=see note 1			0.60	V
	$V_{CE(sat)\ 2}$	I_C=100mA,I_B=5mA			0.60	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=100mA,I_B=5mA		1.10		V
Base Emitter On Voltage	$V_{BE(on)}$	I_C=10uA,V_{CE} =5V		0.52		V
		I_C=100uA,V_{CE} =5V		0.55		V
		I_C=2mA,V_{CE}=5V	0.55		0.75	V

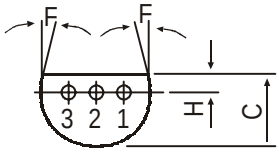
ELECTRICAL CHARACTERISTICS (Ta=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
DYNAMIC CHARACTERISTICS						
Transition Frequency	f_T	I_C=10mA, V_{CE}=5V f=100MHz		250		MHz
Collector Base Capacitance	C_{cbo}	V_{CE}= 10V, I_E =0, f =1MHz		2.5		pF
Noise Figure	NF	I_C=0.2mA, V_{CE}=5V R_S=2KΩ f=30Hz-15KHz			2.5	dB

Note 1 : I_B is value for which I_C =11mA@ V_{CE} =1V
Note 2 : Pulse test = 300µs, Duty Cycle 2%.

TO-92 Plastic Package



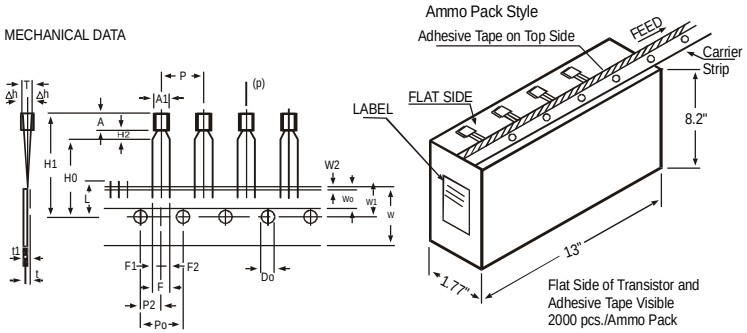


PIN CONFIGURATION
1. EMITTER
2. BASE
3. COLLECTOR

DIM	MIN.	MAX.
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5 DEG	
G	1.14	1.40
H	1.14	1.53
K	12.70	—
L	1.982	2.082

All diminsions in mm.

TO-92 Transistors on Tape and Ammo Pack



All dimensions in mm unless specified otherwise

ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL .	
BODY WIDTH	A1	4.0		4.8		
BODY HEIGHT	A	4.8		5.2		
BODY THICKNESS	T	3.9		4.2		
PITCH OF COMPONENT	P		12.7		±1	
FEED HOLE PITCH	Po		12.7		±0.3	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	TO BE MEASURED AT BOTTOM OF CLINCH
DISTANCE BETWEEN OUTER LEADS	F		5.08		+0.6 -0.2	
COMPONENT ALIGNMENT	△h		0	1		AT TOP OF BODY
TAPE WIDTH	W		18		±0.5	
HOLD-DOWN TAPE WIDTH	Wo		6		±0.2	
HOLE POSITION	W1		9		+0.7 -0.5	
HOLD-DOWN TAPE POSITION	W2		0.5		±0.2	
LEAD WIRE CLINCH HEIGHT	Ho		16		±0.5	
COMPONENT HEIGHT	H1			23.25		
LENGTH OF SNIPPED LEADS	L			11.0		
FEED HOLE DIAMETER	Do		4		±0.2	
TOTAL TAPE THICKNESS	t			1.2		t1 0.3 - 0.6
LEAD - TO - LEAD DISTANCEF1,	F2		2.54		+0.4 -0.1	
CLINCH HEIGHT	H2			3		
PULL - OUT FORCE	(P)	6N				

NOTES
1. MAXIMUM ALIGNMENT DEVIATION BETWEEN LEADS NOT TO BE GREATER THAN 0.2 mm.
2. MAXIMUM NON-CUMULATIVE VARIATION BETWEEN TAPE FEED HOLES SHALL NOT EXCEED 1 mm IN 20 PITCHES.
3. HOLDDOWN TAPE NOT TO EXCEED BEYOND THE EDGE(S) OF CARRIER TAPE AND THERE SHALL BE NO EXPOSURE OF ADHESIVE.
4. NO MORE THAN 3 CONSECUTIVE MISSING COMPONENTS ARE PERMITTED.
5. A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES ARE REQUIRED AFTER THE LAST COMPONENT.
6. SPLICES SHALL NOT INTERFERE WITH THE SPROCKET FEED HOLES.

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-92 Bulk	1K/polybag	200 gm/1K pcs	3" x 7.5" x 7.5"	5K	17" x 15" x 13.5"	80K	23 kgs
TO-92 T&A	2K/ammo box	645 gm/2K pcs	12.5" x 8" x 1.8"	2K	17" x 15" x 13.5"	32K	12.5 kgs

Disclaimer

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