

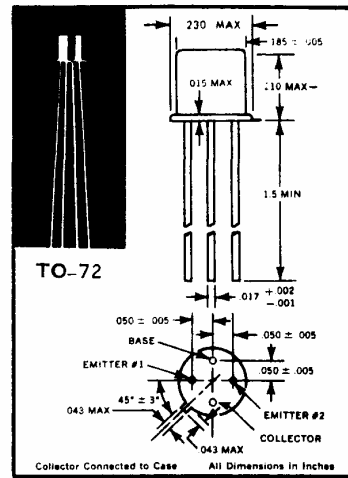
**HIGH VOLTAGE
SILICON EPITAXIAL JUNCTION
INTEGRATED CHOPPER TRANSISTOR**

**3N90
3N91
3N92**

- LOW LEAKAGE
- LOW C_{eb}
- LOW $r_{EE}(\text{sat})$
- HIGH V_{EE} & V_{EB}

ELECTRICAL DATA ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	3N90/3N91/3N92	UNITS
Collector to Base Voltage	BV_{CBO}	-50	V
Emitter (1) to Base Voltage	BV_{E1BO}	-30	V
Emitter (2) to Base Voltage	BV_{E2BO}	-30	V
Emitter to Emitter Voltage	BV_{EE}	±30	V
Emitter (1) to Collector Voltage	BV_{EC1}	-30	V
Emitter (2) to Collector Voltage	BV_{EC2}	-30	V
DC Collector Current	I_C	20	mA
DC Base Current	I_B	20	mA
DC Emitter Current	I_E	10	mA
Power Diss. @ 25°C Ambient	P_D	300mW Derating 1.7mW/°C	
Junction Temp. (Oper. & Store)	T_J	-65°C to +200°C	
Lead Temp. (1/16" from Case)	T_L	240°C for 10 sec.	



ELECTRICAL CHARACTERISTICS: $T_J = 25^\circ\text{C}$ (UNLESS OTHERWISE STATED)

PARAMETER	SYMBOL	CONDITION	3N90			3N91			3N92			UNITS
			MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
Offset Voltage	V_{E1E2}	$I_B = 1.0 \mu\text{A}$, $T_A = -25^\circ\text{C} - 25^\circ\text{C} - 100^\circ\text{C}$	—	25	50	—	50	100	—	100	200	μV
Offset Voltage/Temp.	ΔV_{E1E2}	$I_B = 1.0 \mu\text{A}$ TEMP. = -25°C to $+100^\circ\text{C}$	—	25	75	—	50	125	—	75	175	μV
Offset Voltage/ I_B	$\Delta V_{E1E2}/I_B$	$I_B = 0.5$ to $1.5 \mu\text{A}$	—	10	25	—	10	25	—	10	50	μV
Saturation Resistance	r_{E1E2}	$I_B = 1.0 \mu\text{A}$, $I_{EE} = 100 \mu\text{A}$	10	50	100	10	50	100	10	50	100	Ohms
Emitter Cutoff Current	I_{E1EO} I_{E2EO}	$V_{EE} = -25\text{V}$	—	.5	1	—	.5	1	—	.5	1	nA
Emitter Cutoff Current	I_{E1E2O}	$V_{EE} = \pm 25\text{V}$, $V_{CB} = 0$ (SHORTED) TEMP. = 100°C	—	.5	1	—	.5	1	—	.5	1	nA
Forward Current Gain	h_{FE}	$V_{CB} = -6\text{V}$, $I_C = 1 \text{mA}$, $f = 4\text{MC}$	1.5	—	—	1.5	—	—	1.5	—	—	—
Emitter to Base Capacitance	C_{eb}	$V_{EE} = -6\text{V}$ $I_C = 0$, $f = 4\text{MC}$	—	2	3	—	2	3	—	2	3	pf
Collector to Base Capacitance	C_{cb}	$V_{CB} = -6\text{V}$ $f = 4\text{MC}$, $I_{E1} = I_{E2} = 0$	—	6	10	—	6	10	—	6	10	pf

CRYSTALONCS
2805 Veterans Highway
Suite 14
Ronkonkoma, N.Y. 11779