

40291-40292

SILICON N-P-N TRANSISTORS

Features:

- High carrier output power as 135 Mc Class-C amplifier with 12.5 volt collector supply voltage
- 40291 — 2 watts (min.) at $P_{IN} = 0.5$ watt
- 40292 — 6 watts (min.) at $P_{IN} = 2.0$ watts
- 100% testing of all transistors performed to assure excellent upward modulation characteristics
- High collector efficiency at 135 Mc
- All electrodes isolated from case (40291 and 40292)

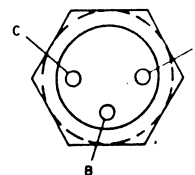
Maximum Ratings, Absolute-Maximum Values:

	40291	40292
COLLECTOR-TO-EMITTER VOLTAGE: With $V_{BE} = -1.5$ volts, V_{CEX}	50	50
At $f = 100$ Mc, $V_{CEX}(100)$	90	90
EMITTER-TO-BASE VOLTAGE, V_{EB0}	4	4
COLLECTOR CURRENT, I_C	0.5	1.25
TRANSISTOR DISSIPATION, P_T : At case temperatures up to 25° C	11.6	23.2
At case temperatures above 25° C	Derate linearly to 0 watts at 200° C	

TEMPERATURE RANGE:

Storage	-65 to 200°C
Operating (Junction)	-65 to 200°C
PIN OR LEAD TEMPERATURE (During soldering): At distances $\geq 1/32$ from insulating wafer (TO-60 package) or from seating plane (TO-39 package) for 10 seconds maximum	230 °C

TERMINAL DESIGNATIONS



40291, 40292
JEDEC TO-60

ELECTRICAL CHARACTERISTICS, At Case Temperature (T_C) = 25°C

CHARACTERISTIC	SYMBOL	TEST CONDITIONS						LIMITS				UNIT
		DC Collector Volts		DC Base Volts	DC Current (Milliamperes)			Type 40291		Type 40292		
		V _{CB}	V _{CE}	V _{BE}	I _E	I _B	I _C	Min.	Max.	Min.	Max.	
Collector Cutoff Current	I _{CEO}		15			0		—	100	—	250	μa
Emitter-to-Base Breakdown Voltage	BV _{EBO}				0.1		0	4.0	—	—	—	Volts
					0.25		0	—	—	4.0	—	Volts
Collector-to-Emitter Breakdown Voltage	BV _{CEX}			—1.5			200 ^a	50	—	50	—	Volts
Real Part of Common-Emitter Input Impedance (At f = 135 Mc)	h _{ie} (real)		12.5				100	12(Typ.)	—	—	—	ohms
			12.5				400	—	—	6.5(Typ.)	—	ohms
RF Carrier Power Output: As Class-C Amplifier, (At f = 135 Mc)	P _{OUT}		12.5					2.0 ^c	—	6.0 ^d	—	watts
Gain-Bandwidth Product	f _T		12.5				100	500(Typ.)	—	—	—	Mc
			12.5				400	—	—	300(Typ.)	—	Mc
Collector-to-Base Capacitance (At f = 1 Mc)	C _{ob}	12.5			0			—	17	—	30	pf
Collector-to-Case Capacitance	C _s							—	6.0	—	6.0	pf
Thermal Resistance (Junction-to-Case)	θ _{J-C}							—	15	—	7.5	°C/W

^aPulsed through an inductor (25 mh);

$R_{BE} = 39$ ohms; duty factor = 50%.

^cFor $P_{IN} = 0.5$ w; minimum efficiency = 70%.

^bAt frequencies of 100 Mc or higher.

^dFor $P_{IN} = 2.0$ w; minimum efficiency = 70%.

