The documentation and process conversion measures necessary to comply with this amendment shall be completed by 8 May 1995

INCH-POUND

MIL-S-19500/527A
AMENDMENT 1
8 February 1995

MILITARY SPECIFICATION

SEMICONDUCTOR DEVICE, DARLINGTON TRANSISTOR, PNP, SILICON, POWER
TYPES 2N6648, 2N6649, AND 2N6650 JANTX AND JANTXV

This amendment forms a part of MIL-S-19500/527A, dated 1 July 1993, and is approved for use by all Departments and Agencies of the Department of Defense.

PAGE 2

3.4, marking; delete and substitute as follows:

"3.4 Marking. Marking shall be in accordance with MIL-S-19500."

PAGE 4

4.3, screening table; delete and substitute the following:

"

Screen (see table II of MIL-STD-19500)	Measurement
	JANTX and JANTXV levels only
1/	Thermal impedance (see 4.3.2)
11	I_{CEX1} and h_{FE1}
12	See 4.3.1
13	ΔI_{CEX1} 100 percent of initial value or 100 μA dc, whichever is greater. Δh_{FE1} = ±25 percent of initial value; subgroup 2 of table I herein.

1/ May be performed anytime before screen 9."

AMSC N/A

FSC 5961

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

Add the following paragraphs:

"4.3.2 Thermal impedance $Z_{\theta JX}$ measurements for screening. The $Z_{\theta JX}$ measurements shall be performed in accordance with MIL-STD-750, method 3131. The maximum limit and conditions for $Z_{\theta JX}$ in screening (table II of MIL-S-19500) shall be derived by each vendor by means of process control of actual measurements which characterizes the die attach process. When three lot date codes have exhibited control, the data from these three lots will be used to establish a fixed screening limit (not to exceed the end point limit). Once a fixed limit has been established, monitor all future sealing lots using a sample from each lot to be plotted on the applicable X and R chart."

"4.3.2.1 Thermal impedance $Z_{\theta JX}$ measurements for initial qualification or requalification. The $Z_{\theta JX}$ measurements shall be performed in accordance with MIL-STD-750, method 3131, (read and record data $Z_{\theta JX}$) derived conditions, limits, and thermal response curve shall be supplied to the qualifying activity on the qualification lot prior to qualification approval."

Add the following paragraph:

"4.5.3 Thermal impedance $Z_{\theta JX}$ limit for end point measurements. The following test conditions shall be used for $Z_{\theta JX}$ end point measurements: $Z_{\theta JX}$ = 1.4°C/W

a. I_M . . . . . 10 mA.

b. V_{CE} measurement voltage . . . . . 10 V (same as V_H).

c. I_H collector heating current . . . . . 4 A (minimum).

d. V_H collector-emitter heating voltage . . . . . 10 V (minimum).

e. t_H heating time . . . . . 100 ms.

f. t_{MD} measurement delay time . . . . . 50 µs to 80 µs.

g. t_{sw} sample window time . . . . . 10 µs (maximum)."

TABLE II; delete and substitute the following:

"4.	Thermal impedance	3131	See 4.5.3	$Z_{\theta JX}$		1.4	°C/W |"

TABLE II, notes; delete and substitute the following:

"1/ The electrical measurements for table IVb (JANTX and JANTXV) of MIL-S-19500 are as follows:

a. Subgroup 2, see table II herein, steps 1 and 3.

b. Subgroup 3, see table II herein, steps 2 and 4.

c. Subgroup 6, see table II herein, steps 2 and 4.

2/ The electrical measurements for table V of MIL-S-19500 are as follows:

a. Subgroup 2, see table II herein, steps 1 and 3.

b. Subgroup 3, see table II herein, steps 1 and 3.

c. Subgroup 6, see table II herein, steps 2 and 4."

CONCLUDING MATERIAL; delete and substitute as printed below:

" CONCLUDING MATERIAL

Custodians:
Army - ER
Navy - EC
Air Force - 17
NASA - NA

Review activities:
Air Force - 13, 15, 19, 85, 99
Navy - MC"

Preparing activity:
DLA - ES

(Project 5961-1623)