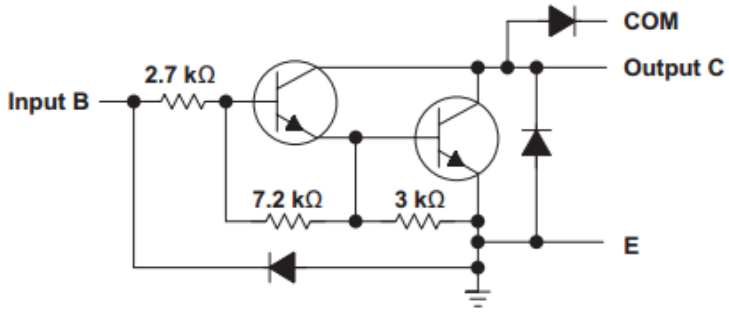
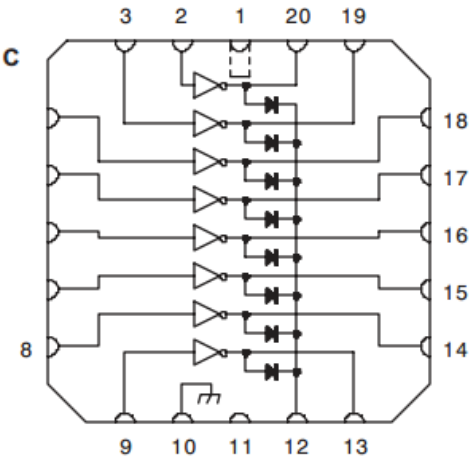
HIGH VOLTAGE MEDIUM CURRENT DRIVER ARRAY

- **Eight Darlington drivers that would interface directly to 5V logic**
- **Each channel can drive upto 600mA; High voltage up to 50V**
- **Hermetic package**
- **Available screened to MIL-STD-883 and QCI in accordance with SMD 5962-86058**
  - **Class level B – SHD849401S**
  - **Class level S – SHD849401SS**
- **Radiation data available**

SCHEMATIC (one of eight circuits)



PINOUT



ABSOLUTE MAXIMUM RATINGS

RATING	MIN.	MAX.	UNITS
Output Voltage		50	V
Continuous Input Current		25	mA
Continuous Collector Current		600	mA
Operating Junction Temperature	-55	150	^{0}C
Storage Temperature Range	-65	150	^{0}C

TABLE 1. ELECTRICAL CHARACTERISTICS

-55°C ≤ T_A ≤ 125°C UNLESS OTHERWISE SPECIFIED.

CHARACTERISTIC	MIN.	MAX.	UNITS	Group A Subgroups
Output Leakage Current (VCE = 50V)		100	µA	1,2,3
Crosstalk (Leakage current at VCE = 5 0V, VIN floating, each channel, all other channels at VIN = 3.85V, T_A =25^{0}C)		100	µA	1
Crosstalk (Leakage current at VCE = 28V, VIN floating, each channel, all other channels at VIN = 3.85V, T_A =25^{0}C)		10	µA	1
VCE SAT. VOLT. (IC = 500mA, IB = 1100µA, T_A =-55^{0}C)		2.1	V	3
VCE SAT. VOLT. (IC = 350mA, IB = 850µA, T_A =-55^{0}C)		1.8	V	3
VCE SAT. VOLT. (IC = 200mA, IB = 550µA, T_A =-55^{0}C)		1.5	V	3
VCE SAT. VOLT. (IC = 500mA, IB = 600µA, T_A =25^{0}C)		1.9	V	1
VCE SAT. VOLT. (IC = 350mA, IB = 500µA, T_A =25^{0}C)		1.6	V	1
VCE SAT. VOLT. (IC = 200mA, IB = 350µA, T_A =25^{0}C)		1.3	V	1
VCE SAT. VOLT. (IC = 500mA, IB = 600µA, T_A =125^{0}C)		2.1	V	2
VCE SAT. VOLT. (IC = 350mA, IB = 500µA, T_A =125^{0}C)		1.8	V	2
VCE SAT. VOLT. (IC = 200mA, IB = 350µA, T_A =125^{0}C)		1.5	V	2
Input Current (ON) (VIN = 3.85V)	650	1350	µA	1,2,3
Input Current (OFF) (IC = 500µA, T_A =125^{0}C)	25		µA	2
Input Voltage (VCE = 2V, IC = 250mA, T_A =-55^{0}C)		3.6	V	3
Input Voltage (VCE = 2V, IC = 300mA, T_A =-55^{0}C)		3.9	V	3
Input Voltage (VCE = 2V, IC = 500mA, T_A =-55^{0}C)		6.0	V	3
Input Voltage (VCE = 2V, IC = 250mA, T_A =125^{0}C)		2.7	V	2
Input Voltage (VCE = 2V, IC = 300mA, T_A =125^{0}C)		3.0	V	2
Input Voltage (VCE = 2V, IC = 500mA, T_A =125^{0}C)		3.5	V	2
Input Capacitance (T_A =25^{0}C)		25	pF	4
Turn-On Delay (TPLH, 0.5 VIN to 0.5 VOUT, T_A =25^{0}C)		1000	ns	9,10,11*
Turn-Off Delay (TPHL, 0.5 VIN to 0.5 VOUT, T_A =25^{0}C)		1000	ns	9,10,11*
Clamp Diode Leakage Current (VR = 50V)		50	µA	1,2,3
Clamp Diode Forward Voltage (IF = 350mA)		2.0	V	1,2,3
Clamp Diode Forward Voltage (IF = 500mA)		2.5	V	1,2,3

*Subgroups 10 and 11 shall be guaranteed if not tested to the limits specified in Table 1.

POST RADIATION ELECTRICAL CHARACTERISTICS

Conditions : 100KRAD
Annealing time : 216 hours
Bias Conditions : Refer Test Report

CHARACTERISTIC	MIN.	MAX.	UNITS	Group A Subgroups
Output Leakage Current (VCE = 50V)		200	µA	1
Output Leakage Current (VCE = 40V)		150	µA	1
Clamp Diode Leakage Current (VR = 50V)		150	µA	1

INSPECTION, SCREENING, AND QUALITY CONFORMANCE INSPECTION

1. Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-PRF-38535, Appendix A:
   Class level B – SHD849401S
   Class level S – SHD849401SS

2. Screening. Screening shall be in accordance with method 5004 of MIL-STD-883 and shall be conducted on all devices prior to quality conformance inspection; class level B – SHD849401S, class level S – SHD849401SS. The following additional criteria shall apply:
   a. Burn-in test, method 1015 of MIL-STD-883.
      i. Test condition A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to the preparing or acquiring activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in method 1015 of MIL-STD-883.
      ii. T_A = +125°C, minimum.
   b. Interim and final electrical test parameters shall be as specified in table 2 herein, except interim electrical parameter tests prior to burn-in are optional at the discretion of the manufacturer.

3. Quality conformance inspection. Quality conformance inspection shall be in accordance with method 5005 of MIL-STD-883 including groups A, B, C, and D inspections; class level B – SHD849401S, class level S – SHD849401SS. The following additional criteria shall apply.
   a. Group A inspection.
      i. Tests shall be as specified in table 2 herein.
      ii. Subgroups 5, 6, 7, and 8 in table 1, method 5005 of MIL-STD-883 shall be omitted.
      iii. Subgroup 4 (CIN measurement) shall be measured only for the initial test and after process or design changes which may affect input capacitance.

TABLE 2. ELECTRICAL TEST REQUIREMENTS

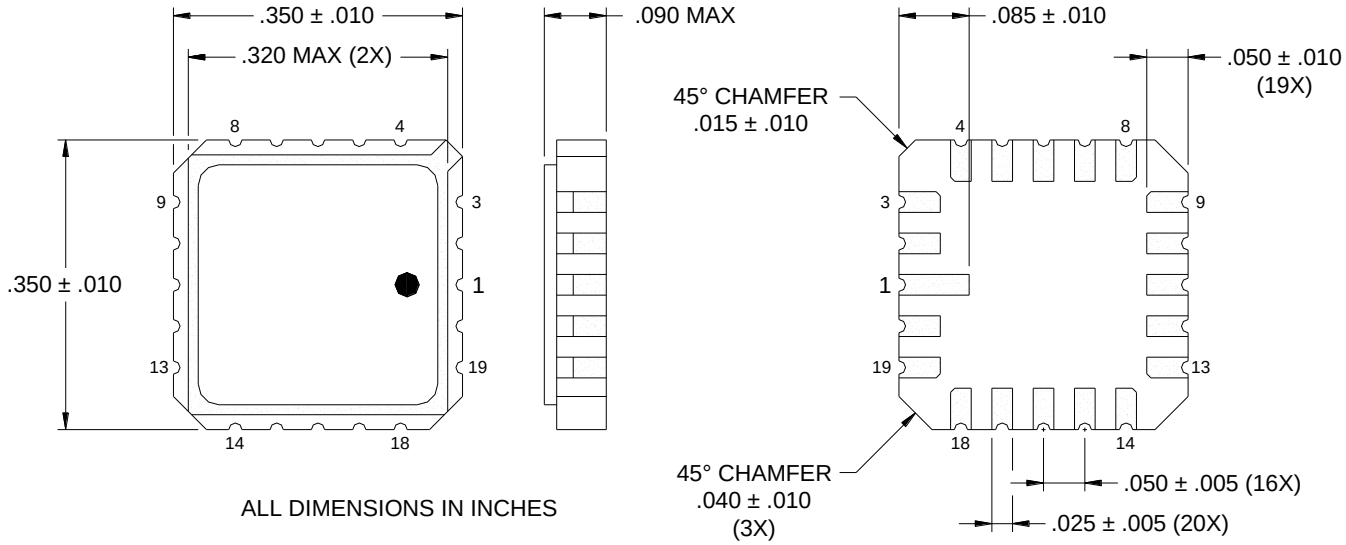
MIL-STD-883 test Requirements	Subgroups (in accordance with MIL-STD-883, method 5005, Table I)
Interim electrical parameters (method 5004)	1
Final electrical test parameters (method 5004)	1*, 2, 3, 9
Group A test requirements (method 5005)	1, 2, 3, 4, 9, 10**, 11**
Groups C and D end-point electrical parameters (method 5005)	1, 2, 3

* PDA applies to subgroup 1.
** Subgroups 10 and 11, if not tested, shall be guaranteed to the limits specified in table I herein.

Groups C and D inspections:

iv. End-point electrical parameters shall be as specified in table 2 herein.
v. Steady-state life test conditions, method 1005 of MIL-STD-883.
   1. Test condition A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to the preparing or acquiring activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in method 1005 of MIL-STD-883.
   2. T_A = +125°C, minimum.
   3. Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.

MECHANICAL OUTLINE



PKG: LCC-20