***MIL-PRF-38534 CERTIFIED***

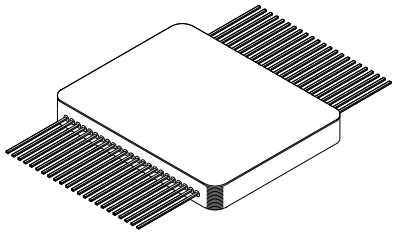
# RAD HARD 16 CHANNEL DRIVER 1756

M.S.KENNEDY CORP.

4707 Dey Road Liverpool, N.Y. 13088 (315) 701-6751

## *FEATURES:*

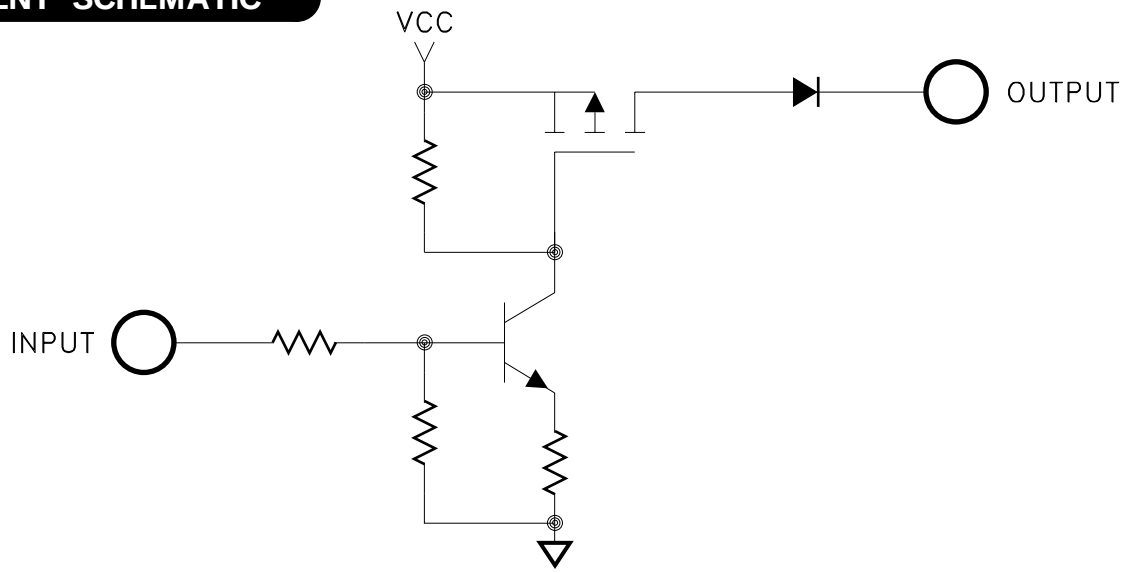
- RAD HARD MOSFETs
- 16 Channel
- Available Fully Screened to MIL-PRF-38534
- Surface Mount Flatpack
- Low Profile
- 100V/0.5A Max. Ratings for Switches
- Series Diode for Each Output



## *DESCRIPTION:*

The MSK 1756 is a radiation hardened 16 channel high side driver module. The device is designed for space applications where quality, performance and low weight are a must. The MSK 1756 is packaged in a hermetic 46 pin flatpack.

## EQUIVALENT SCHEMATIC




ONE OF SIXTEEN CHANNELS SHOWN

## TYPICAL APPLICATIONS

- High Side Switch Drivers
- High Level Switching
- Space Applications

## PIN-OUT INFORMATION

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | IN1 | 13 | SPARE | 25 | IN16 | 37 | VCC2 |
| 2 | IN2 | 14 | OUT5 | 26 | IN15 | 38 | OUT12 |
| 3 | IN3 | 15 | OUT6 | 27 | IN14 | 39 | OUT11 |
| 4 | IN4 | 16 | OUT7 | 28 | IN13 | 40 | OUT10 |
| 5 | SPARE | 17 | OUT8 | 29 | SPARE | 41 | OUT9 |
| 6 | OUT1 | 18 | SPARE | 30 | OUT16 | 42 | SPARE |
| 7 | OUT2 | 19 | IN5 | 31 | OUT15 | 43 | IN12 |
| 8 | OUT3 | 20 | IN6 | 32 | OUT14 | 44 | IN11 |
| 9 | OUT4 | 21 | IN7 | 33 | OUT13 | 45 | IN10 |
| 10 | VCC1 | 22 | IN8 | 34 | SPARE | 46 | IN9 |
| 11 | VCC1 | 23 | GND | 35 | VCC2 | | |
| 12 | VCC1 | 24 | GND | 36 | VCC2 | | |

## ABSOLUTE MAXIMUM RATINGS ④

| | | | | | |
|---|---|---|---|---|---|
| $V_{CC}$ | Positive Supply Voltage | +35V | $T_C$ | Operating Temperature Range | -55°C to +125°C |
| $T_J$ | Junction Temperature | 150°C | | Storage Temperature Range | -55°C to +150°C |
| $V_{IN}$ | Input Voltage | 6.0V | | Lead Temperature (Soldering, 10 Seconds) | 265°C |
| $V_{OUT}$ | Output Voltage | VCC | | Ouput Current | 625mA |
| | Ouput Breakdown Voltage (VCC-VOUT) | 100V | | | |

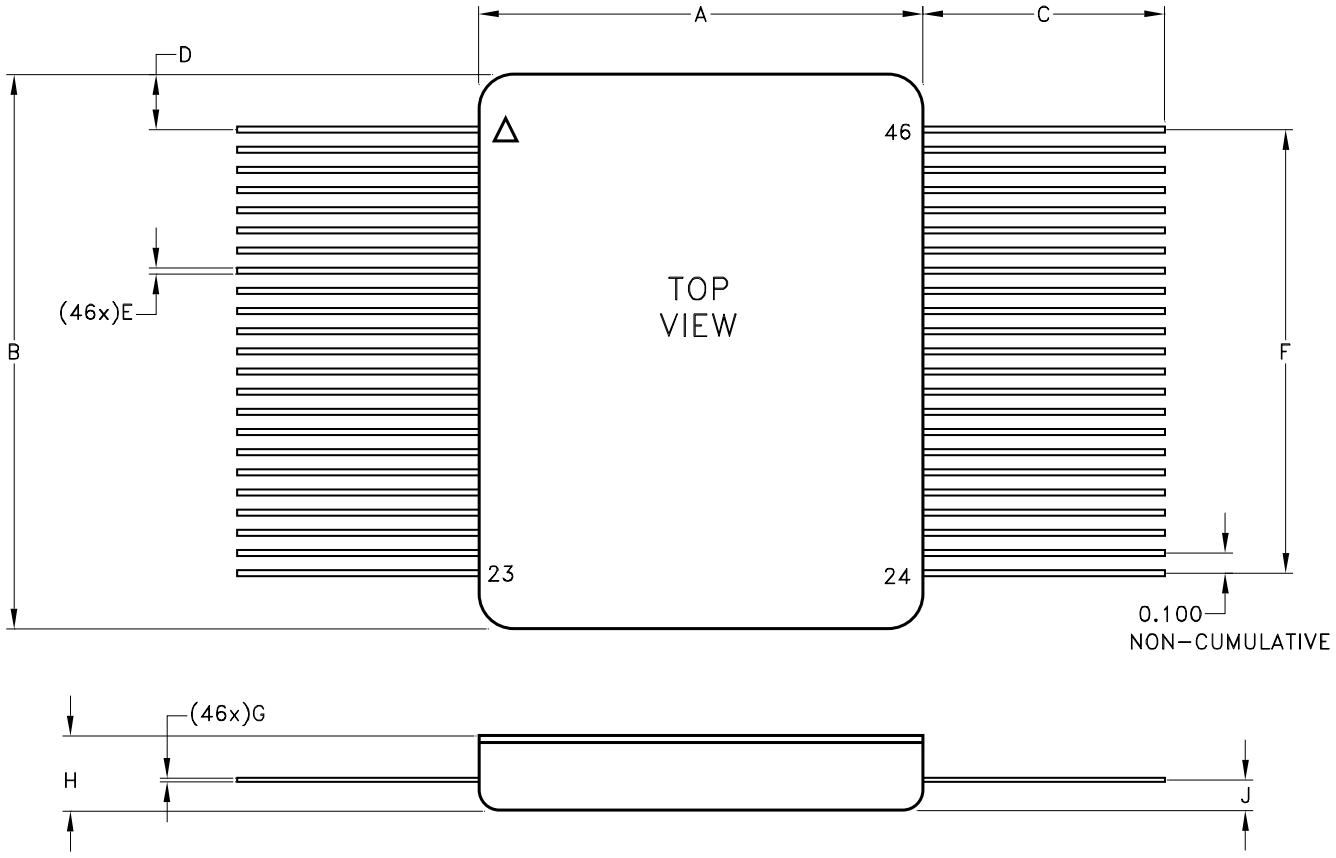
## ELECTRICAL SPECIFICATIONS

| Parameter | Test Conditions ① | | Group A Subgroup | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|---|
| Supply Current | VIN = N/C | | 1 | - | - | 250 | uA |
| | RL = N/C | | 2,3 | - | - | 0.5 | mA |
| Output Voltage (Off) | CHANNELS 1 THRU 16 WRT +VCC<br>RL = 10KΩ | | 1,2,3 | 29.0 | - | - | V |
| Output Voltage (On) | CHANNELS 1 THRU 16 WRT +VCC | | 1 | - | - | 1.6 | V |
| | RL = 88.7Ω | | 2,3 | - | - | 1.8 | V |
| Output Delay Times | CHANNELS 1 THRU 16<br>RL = 88.7Ω<br>VIN = 0V-5V SQ WAVE<br>MEASURED @ 50% POINTS OF INPUT AND OUTPUT | TON | 4 | - | - | 50 | uS |
| | | TOFF | 4 | - | - | 70 | uS |
| Output Voltage Delta (On) | CHANNELS 1 THRU 16 WRT +VCC<br>RL = 88.7Ω | | 1 | - | - | 0.2 | V |
| Input Voltage (Logic 1) ② | | | 1 | 4.0 | - | - | V |
| Input Voltage (Logic 0) ② | | | 1 | - | - | 0.6 | V |
| Input Current ② | | | 1 | - | - | 300 | uA |
| Supply Current ② | VIN = +4.1V<br>RL = 88.7Ω (OUTPUT UNDER TEST)<br>RL = 10KΩ (ALL OTHER OUTPUTS) | | 1 | - | - | 5 | mA |
| Output Current ② | VIN = +4.1V<br>RL = 88.7Ω (OUTPUT UNDER TEST)<br>RL = 10KΩ (ALL OTHER OUTPUTS) | | 1 | 325 | - | - | mA |

*NOTES:*

① Unless otherwise specified the following test conditions shall apply: +VCC = +31.5V, +VH = +4.1V, +VL = +1V.
② Parameter, if not tested shall be guaranteedto the specified limits in table 1.
③ Subgroup 1,4 $T_A = T_C = +25°C$
Subgroup 2,5 $T_A = T_C = +125°C$
Subgroup 3,6 $T_A = T_C = -55°C$
④ Continuous operation at or above absolute maximum ratings may adversly effect the device performance and/or life cycle.

## MECHANICAL SPECIFICATIONS




| REF | MIN | MAX |
|---|---|---|
| A | 1.090 | 1.110 |
| B | 1.365 | 1.385 |
| C | 0.500 | ——— |
| D | 0.127 | 0.147 |
| E | 0.012 | 0.018 |
| F | 1.095 | 1.105 |
| G | 0.008 | 0.012 |
| H | ——— | 0.185 |
| J | 0.067 | 0.077 |

ESD TRIANGLE INDICATES PIN 1
WEIGHT = 13 GRAMS TYPICAL

# *ORDERING INFORMATION*

| Part Number | Screening Level |
|---|---|
| MSK1756 | Industrial |
| MSK1756H | MIL-PRF-38534 Class H |
| MSK1756K | MIL-PRF-38534 Class K |


M.S. Kennedy Corp.
4707 Dey Road, Liverpool, New York 13088
Phone (315) 701-6751
FAX (315) 701-6752
www.mskennedy.com