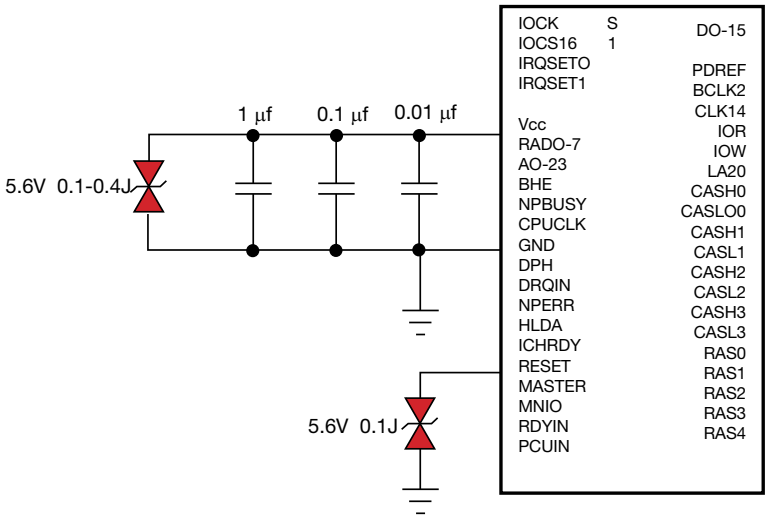
Application Guide
Typical Circuits Requiring Protection

The following applications and schematic diagrams show where TransGuards® might be used to suppress various transient voltages:

- ASIC Reset & Vcc Protection
- Micro Controllers, Relays, DC Motors
- I/O Port Protection
- Keyboard Protection
- Modem Protection
- Sensor Protection
- Preamplifier Protection
- Audio Circuit Protection
- LCD Protection
- Optics Protection

ASIC RESET & Vcc PROTECTION



MICRO CONTROLLERS RELAYS, DC MOTORS

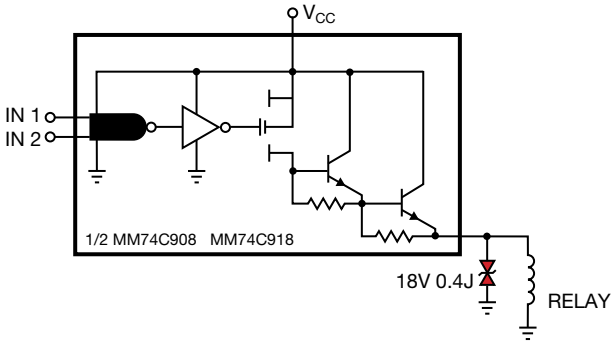
TRANSGUARD® CHARACTERISTICS

WORKING VOLTAGE ≥ RELAY OR MOTOR VOLTAGE

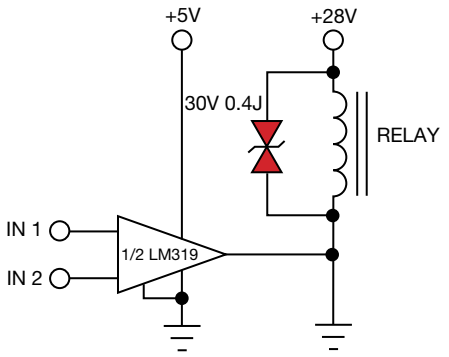
ENERGY RATING TYPICALLY > 0.3J

CAPACITANCE IS OF NO CONCERN

CMOS RELAY DRIVER



LM319 RELAY DRIVER



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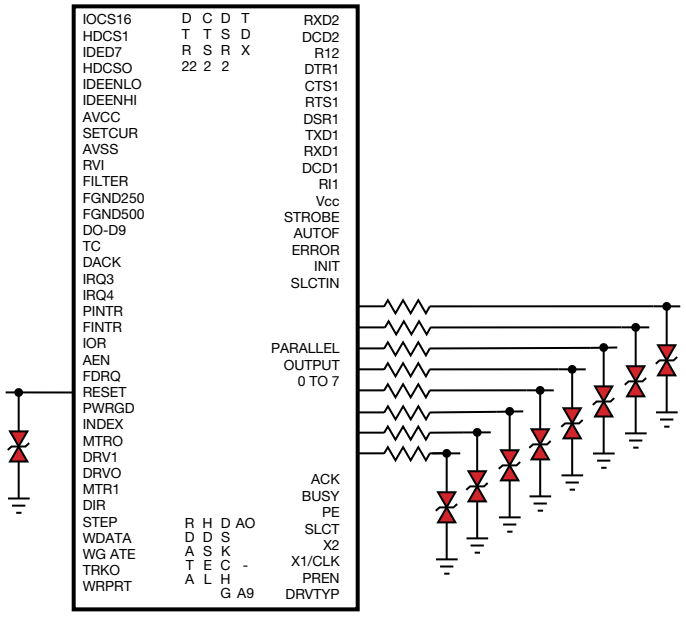
I/O PORT PROTECTION

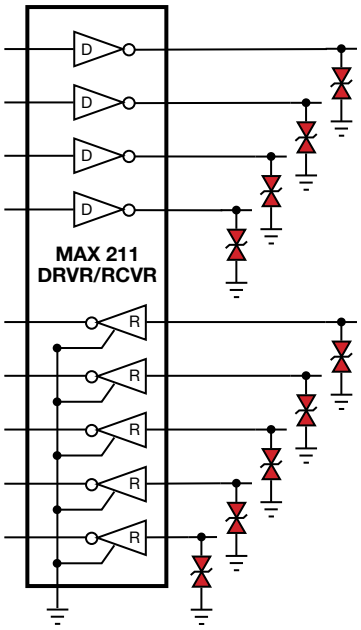
TRANSGUARD® CHARACTERISTICS

WORKING VOLTAGE TYPICALLY 14V - 18V
ENERGY RATING TYPICALLY 0.05J - 0.1J
CAPACITANCE SHOULD BE MINIMIZED

SUB NOTEBOOK & PDA'S



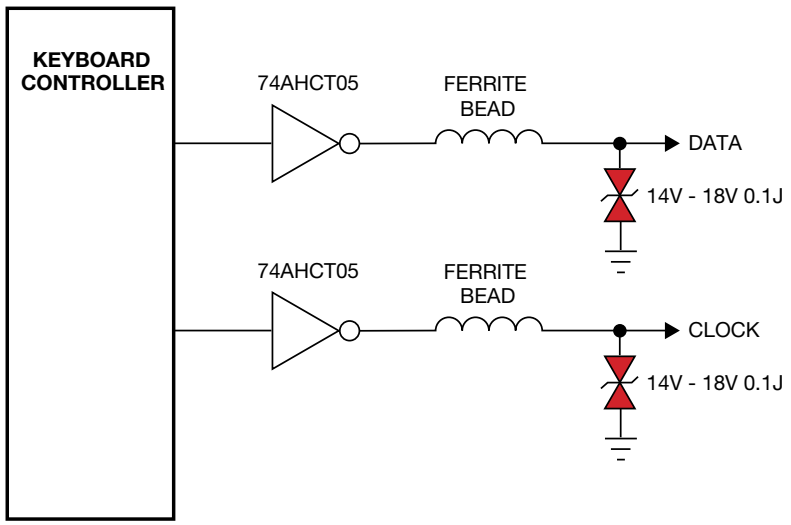
NOTEBOOK & WORK STATION



KEYBOARD PROTECTION

TRANSGUARD® CHARACTERISTICS

WORKING VOLTAGE >5.6V
ENERGY RATING TYPICALLY <0.4J
CAPACITANCE PREFERRED TO BE MINIMUM



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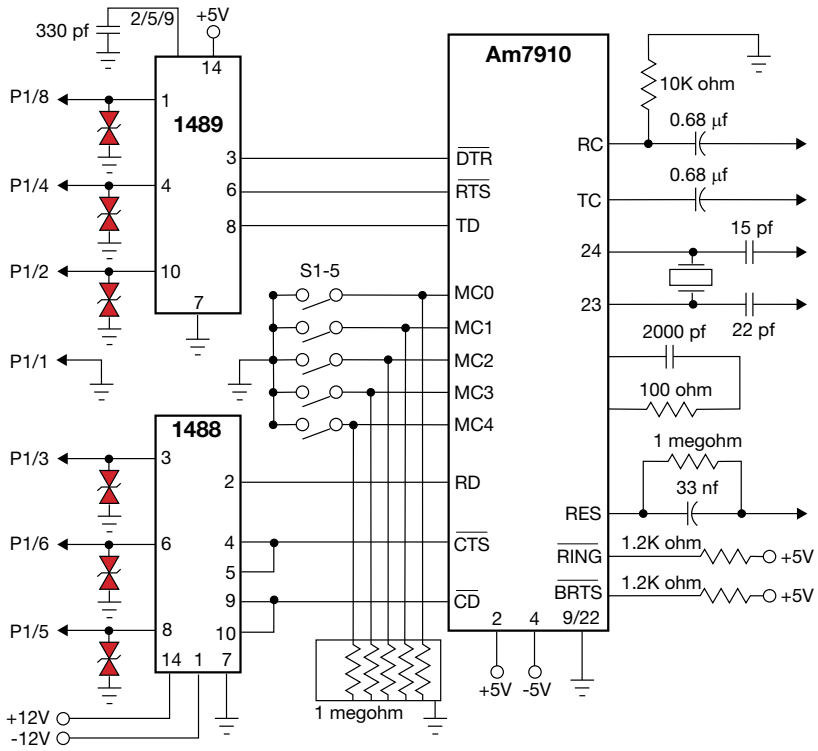
MODEM PROTECTION

TRANSGUARD® CHARACTERISTICS

WORKING VOLTAGE <26V

ENERGY RATING ≥ 0.1J



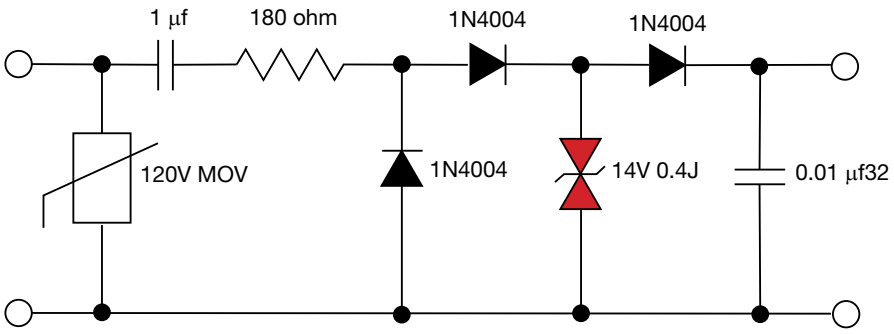
SENSOR PROTECTION

TRANSGUARD® CHARACTERISTICS

WORKING VOLTAGE TYPICALLY >14V

ENERGY RATING > 0.4J

CAPACITANCE IS NO CONCERN



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ANTENNA AND PREAMPLIFIER PROTECTION

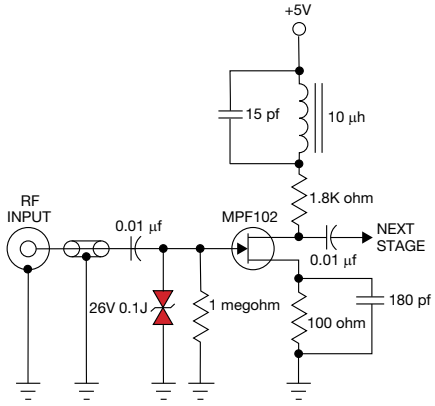
TRANSGUARD® CHARACTERISTICS

WORKING VOLTAGE TYPICALLY 18V - 26V

ENERGY RATING 0.05J - 0.9J

CAPACITANCE OF CONCERN ON MANY DESIGNS

PREAMPLIFIER PROTECTION



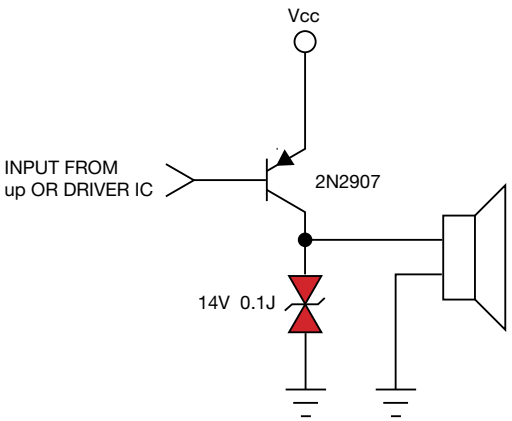
AUDIO CIRCUIT PROTECTION

TRANSGUARD® CHARACTERISTICS

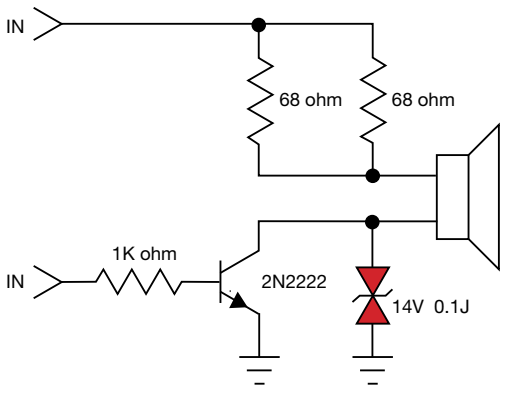
WORKING VOLTAGE TYPICALLY 14V - 18V

ENERGY RATING 0.1J

PAGER AUDIO PROTECTION



NOTEBOOK, WORK STATION AUDIO PROTECTION



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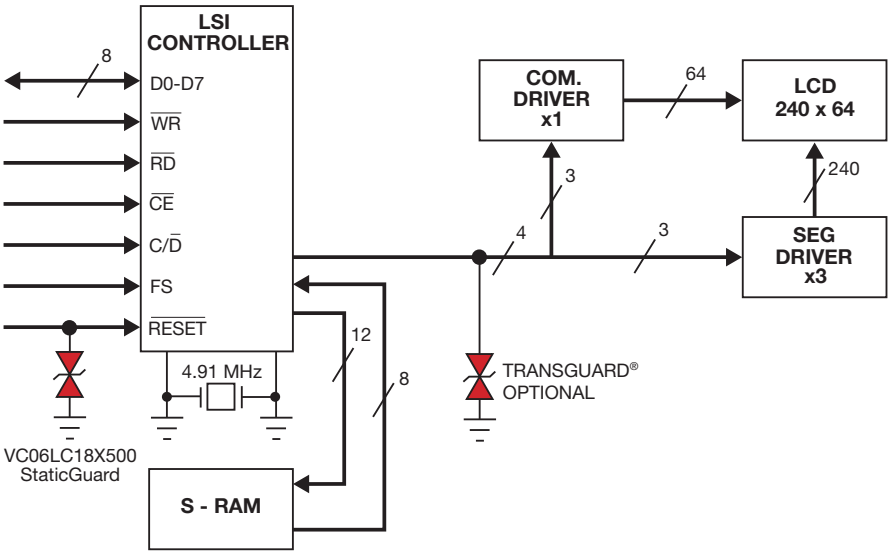
LCD PROTECTION

TRANSGUARD® CHARACTERISTICS

WORKING VOLTAGE < 5.6V

ENERGY RATING < 0.1J



OPTICS PROTECTION

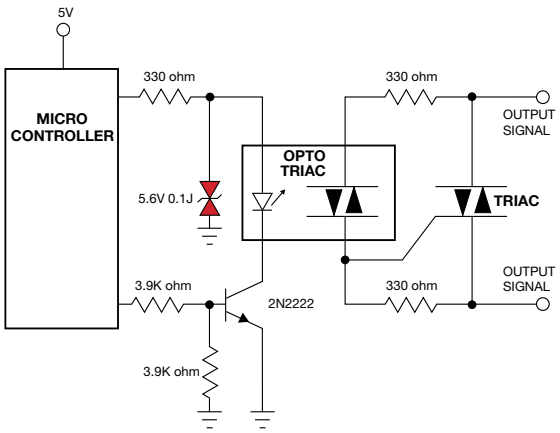
TRANSGUARD® CHARACTERISTICS

WORKING VOLTAGE ≤ 18V

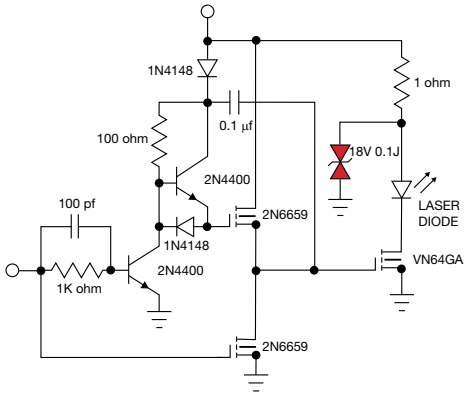
ENERGY RATING 0.1J

CAPACITANCE SHOULD BE MINIMIZED

OPTO ISOLATER PROTECTION



LASER DIODE PROTECTION



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