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
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

= TransGuard®
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
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
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
**TransGuard®**
**AVX Multilayer Transient Voltage Protection**
**Typical Circuits Requiring Protection**

**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**

= TransGuard®