

ATP602 — General-Purpose Switching Device Applications

N-Channel Silicon MOSFET

Features

- ON-resistance $R_{DS(on)}=2.1\Omega$ (typ.)
- 10V drive
- Input capacitance $C_{iss}=350pF$ (typ.)
- Halogen free compliance

Specifications

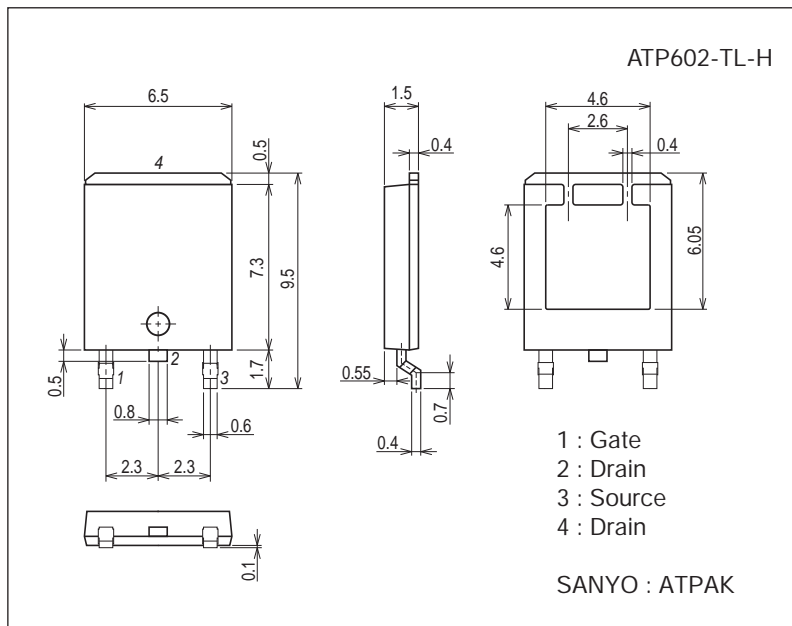
Absolute Maximum Ratings at $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		600	V
Gate-to-Source Voltage	V_{GSS}		± 30	V
Drain Current (DC)	I_D		5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	15	A
Allowable Power Dissipation	P_D	$T_c=25^\circ C$	70	W
Channel Temperature	T_{ch}		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$
Avalanche Energy (Single Pulse) *1	E_{AS}		74	mJ
Avalanche Current *2	I_{AV}		5	A

Note : *1 $V_{DD}=99V$, $L=5mH$, $I_{AV}=5A$ (Fig.1)
 *2 $L \leq 5mH$, Single pulse

Package Dimensions

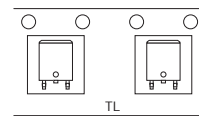
unit : mm (typ)
 7057-001



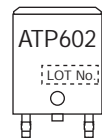
Product & Package Information

- Package : ATPAK
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

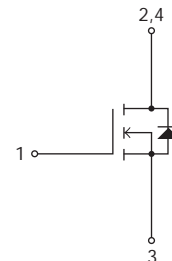
Packing Type: TL



Marking



Electrical Connection



ATP602

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit	
			min	typ	max		
Drain-to-Source Breakdown Voltage	V(BR)DSS	I _D =10mA, V _{GS} =0V	600			V	
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =480V, V _{GS} =0V			100	μA	
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±30V, V _{DS} =0V			±100	nA	
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	3		5	V	
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =2.5A	1.5	2.9		S	
Static Drain-to-Source On-State Resistance	R _{DS(on)}	I _D =2.5A, V _{GS} =10V		2.1	2.7	Ω	
Input Capacitance	C _{iss}	V _{DS} =30V, f=1MHz		350		pF	
Output Capacitance	C _{oss}				68		pF
Reverse Transfer Capacitance	C _{rss}				15		pF
Turn-ON Delay Time	t _{d(on)}	See Fig.2		14.2		ns	
Rise Time	t _r			37.4		ns	
Turn-OFF Delay Time	t _{d(off)}			36.2		ns	
Fall Time	t _f			20.4		ns	
Total Gate Charge	Q _g	V _{DS} =200V, V _{GS} =10V, I _D =5A		13.6		nC	
Gate-to-Source Charge	Q _{gs}			3.4		nC	
Gate-to-Drain "Miller" Charge	Q _{gd}			7.2		nC	
Diode Forward Voltage	V _{SD}	I _S =5A, V _{GS} =0V		0.9	1.2	V	

Fig.1 Avalanche Resistance Test Circuit

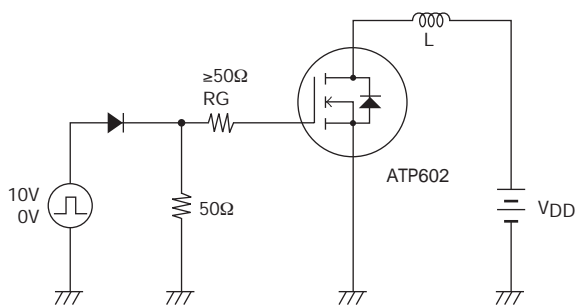
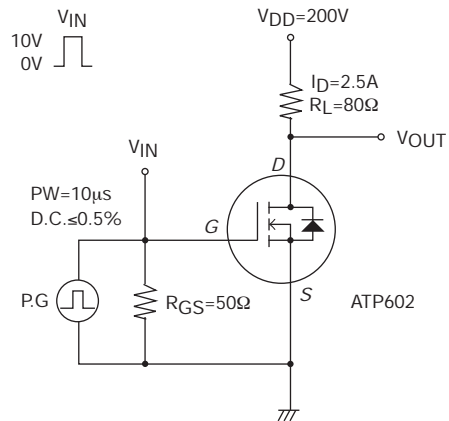
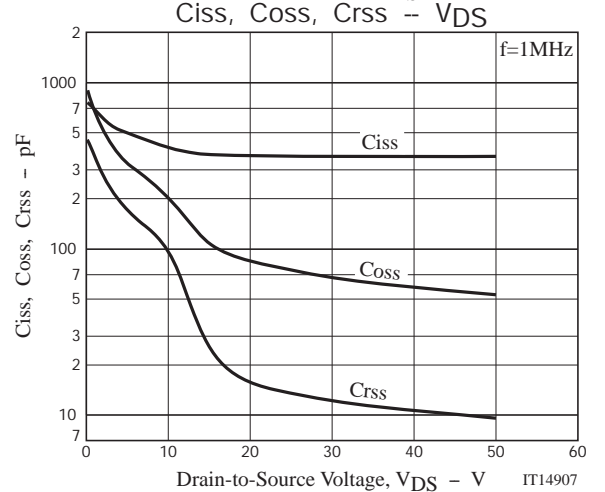
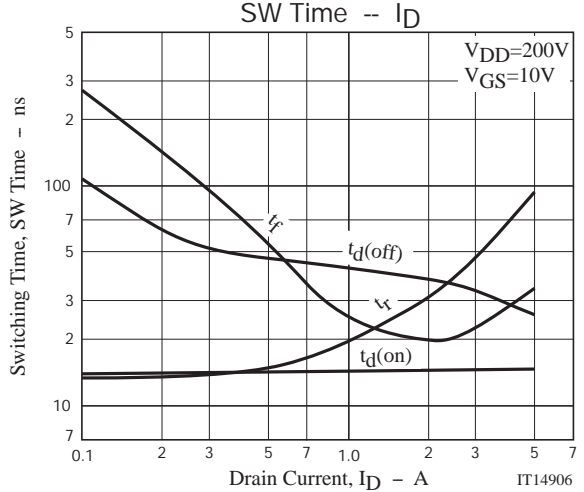
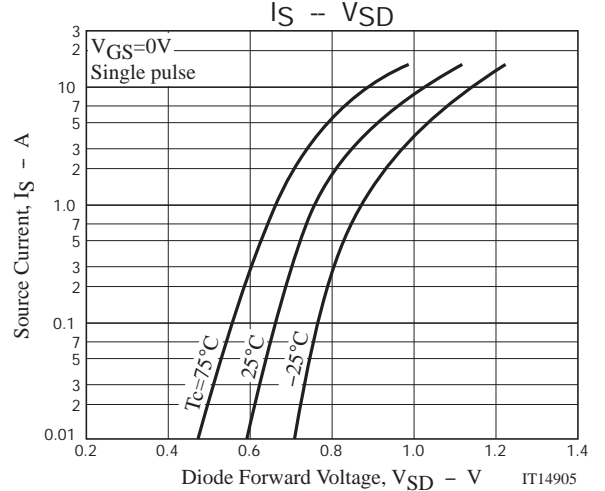
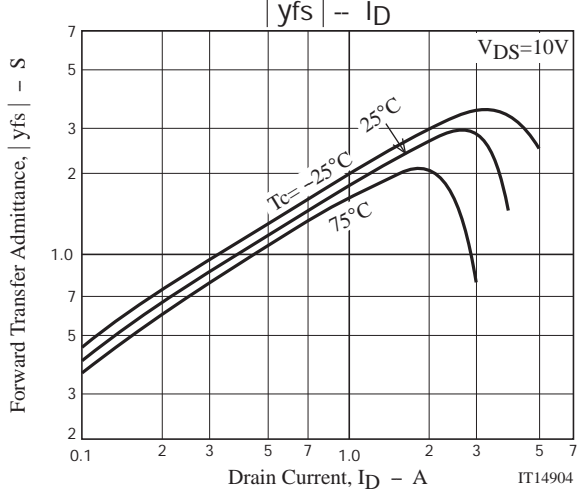
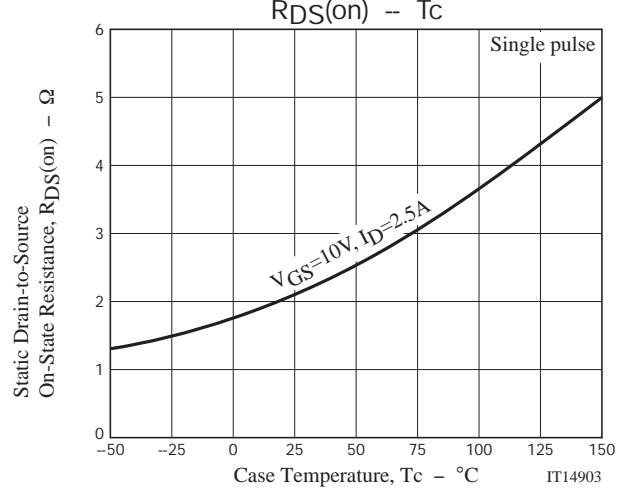
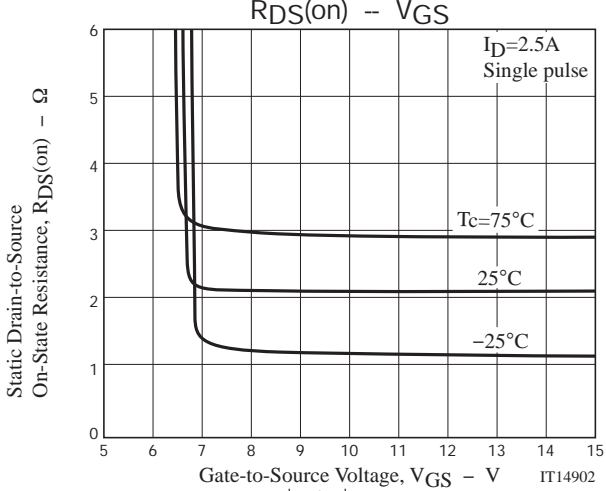
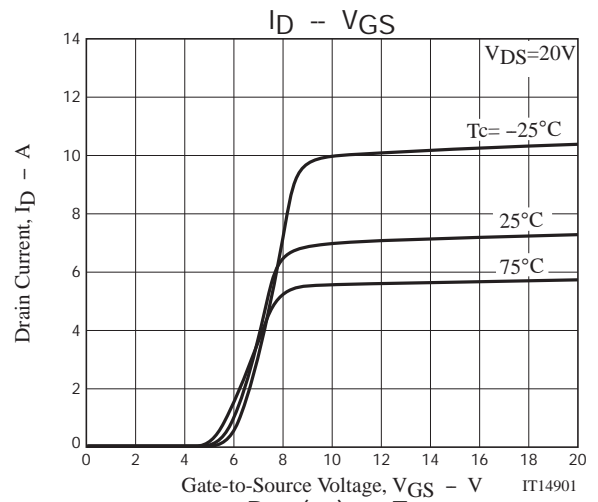
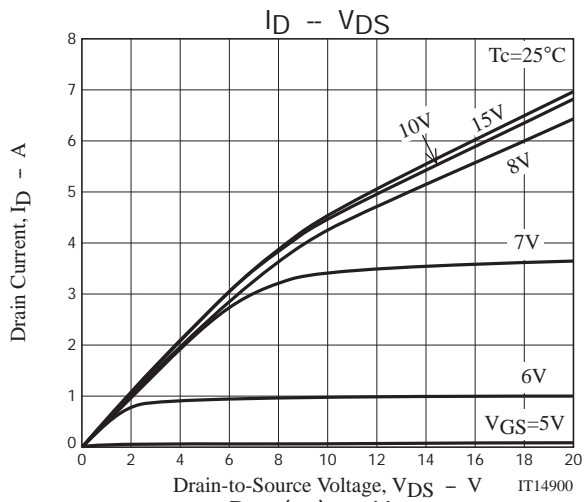


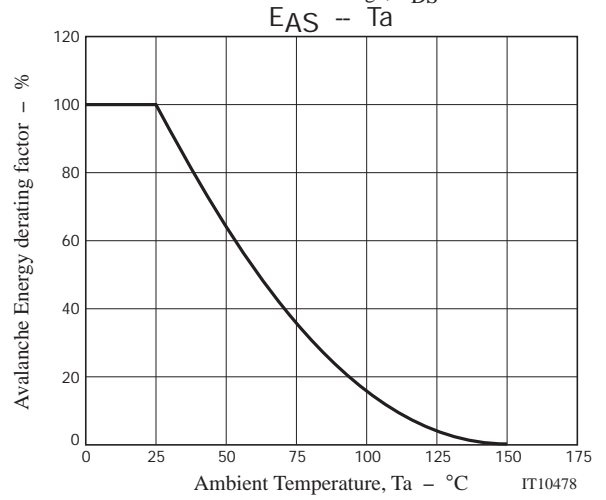
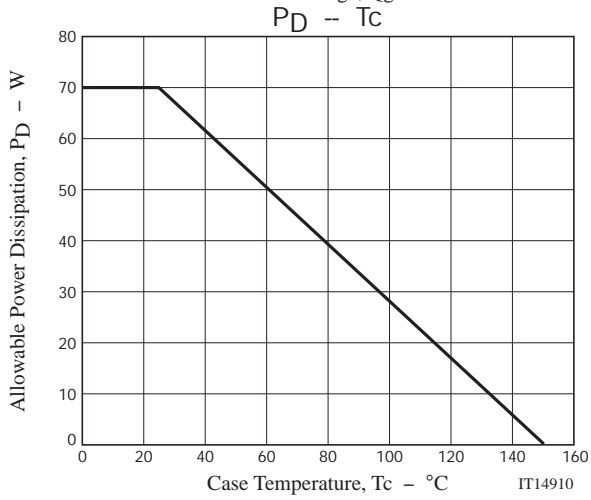
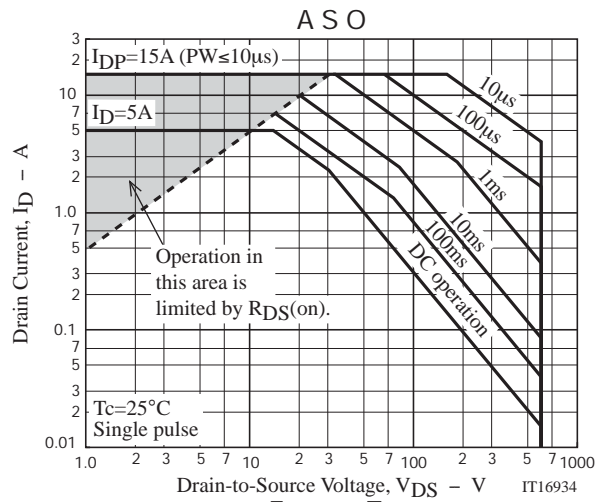
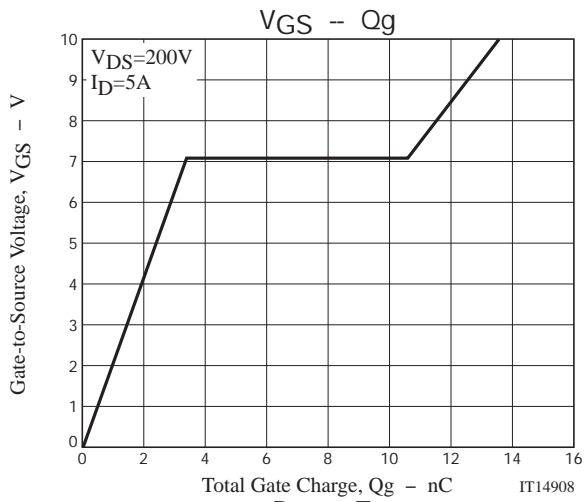
Fig.2 Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
ATP602-TL-H	ATPAK	3,000pcs./reel	Pb Free and Halogen Free





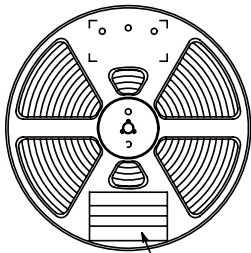
Taping Specification

ATP602-TL-H

1. Packing Format (TL)

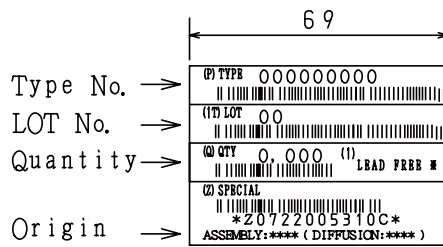
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	INNER BOX SD-C-18	OUTER BOX SD-A-18
ATPAK	ATP	3,000	3,000	15,000	1 reels contained Dimensions:mm (external) 340×340×28	5 inner boxes contained Dimensions:mm (external) 355×355×165

Packing method



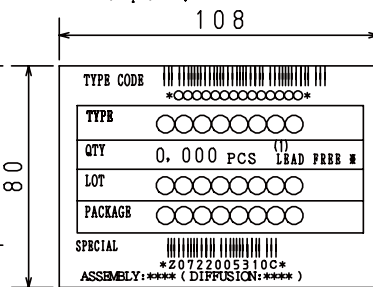
Reel label

Reel label, Inner box label
(unit:mm)



Outer box label

It is a label at the time of factory shipments. The form of a label may change in physical distribution process.



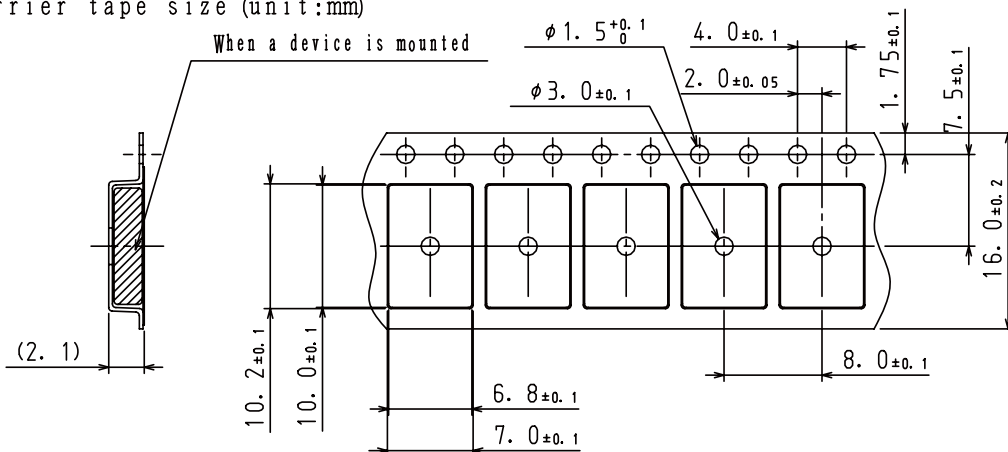
NOTE (1)

The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



2-2. Device placement direction Reel

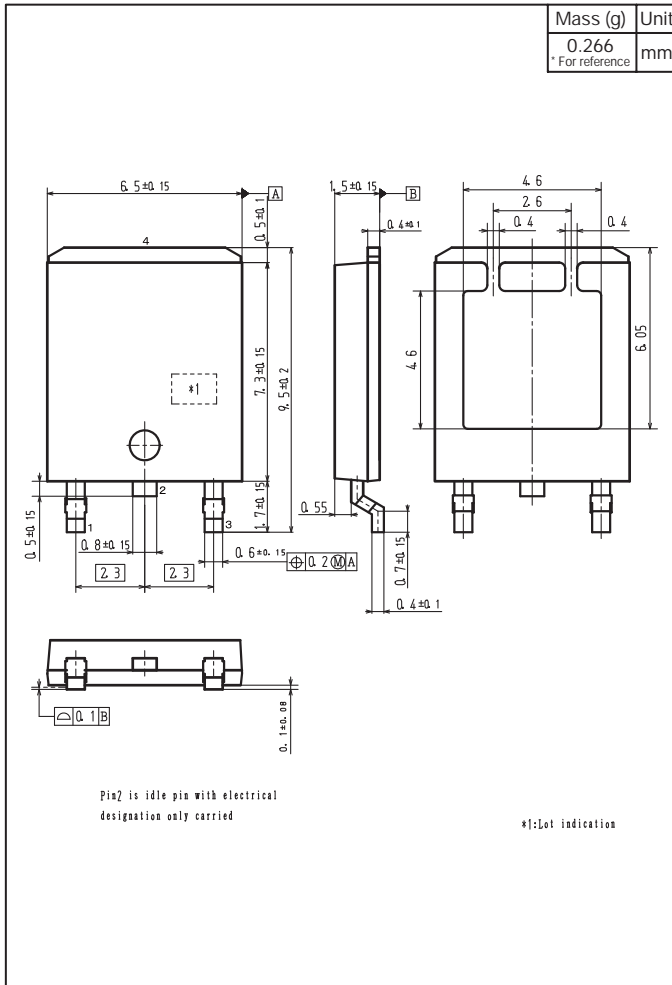


The one electrode terminals on feed hole side...TL

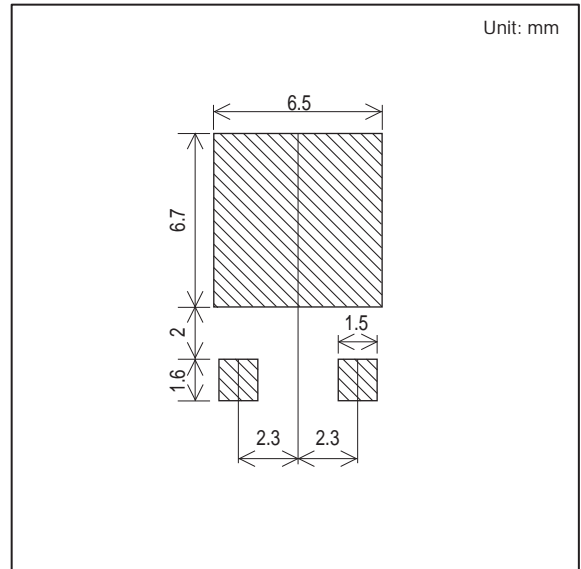
ATP602

Outline Drawing

ATP602-TL-H



Land Pattern Example



Note on usage : Since the ATP602 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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