



# SANYO Semiconductors

## DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

# SCH1433 — General-Purpose Switching Device Applications

## Features

- 1.8V drive
- Halogen free compliance
- Protection diode in

## Specifications

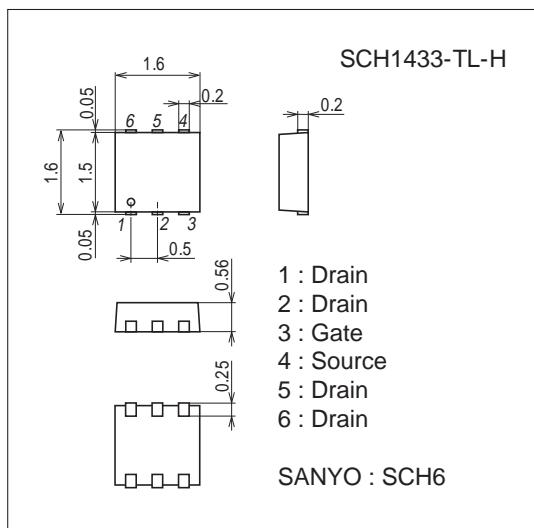
### Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		20	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 10$	V
Drain Current (DC)	$I_D$		3.5	A
Drain Current (Pulse)	$I_{DP}$	$P_W \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	14	A
Allowable Power Dissipation	$P_D$	When mounted on ceramic substrate (900mm <sup>2</sup> x 0.8mm)	0.8	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

## Package Dimensions

unit : mm (typ)

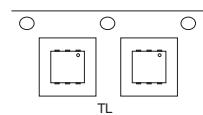
7028-002



## Product & Package Information

- Package : SCH6
- JEITA, JEDEC : SOT-563
- Minimum Packing Quantity : 5,000 pcs./reel

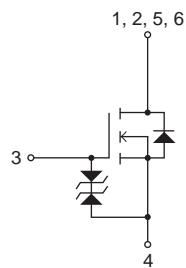
## Packing Type : TL



## Marking

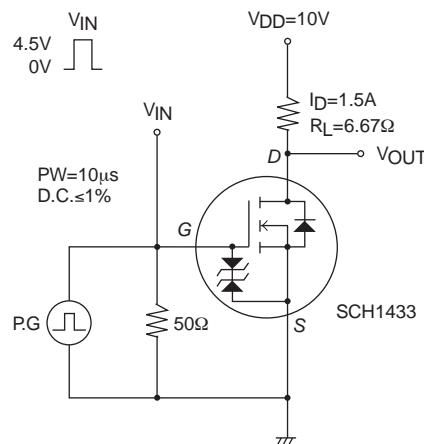


## Electrical Connection

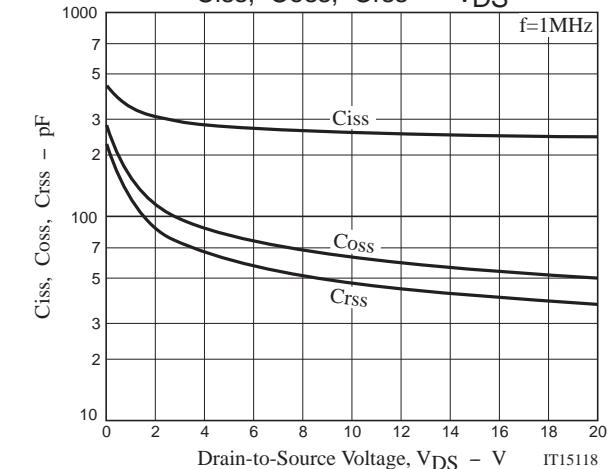
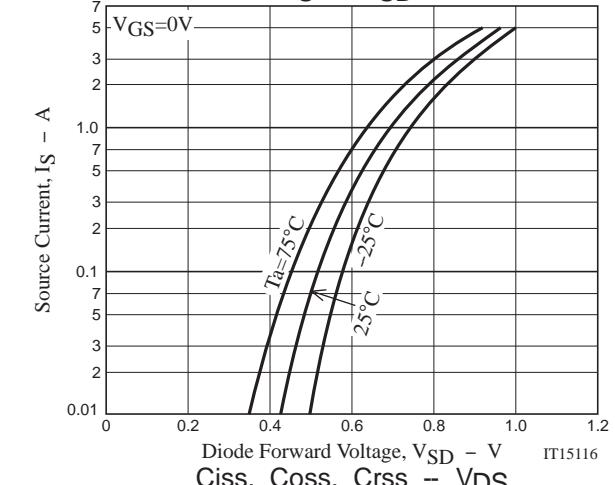
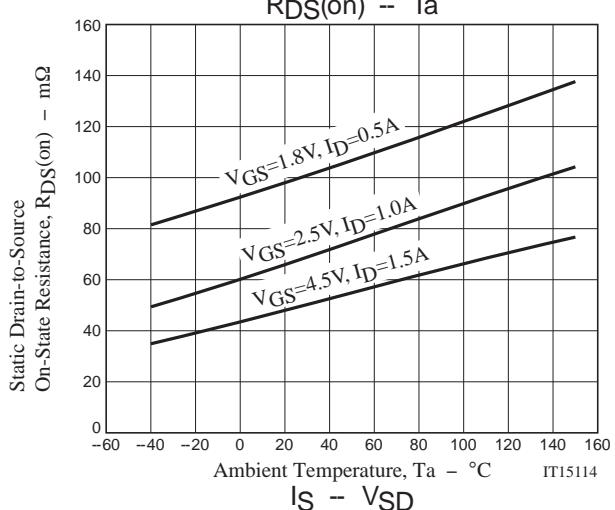
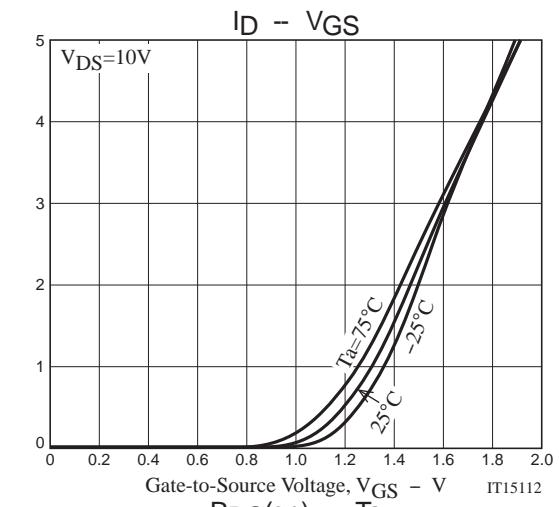
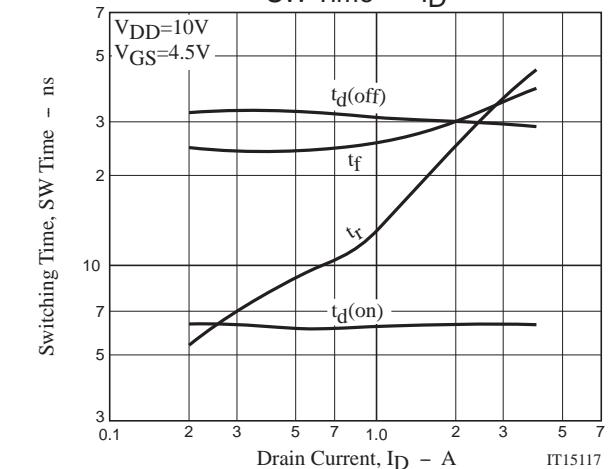
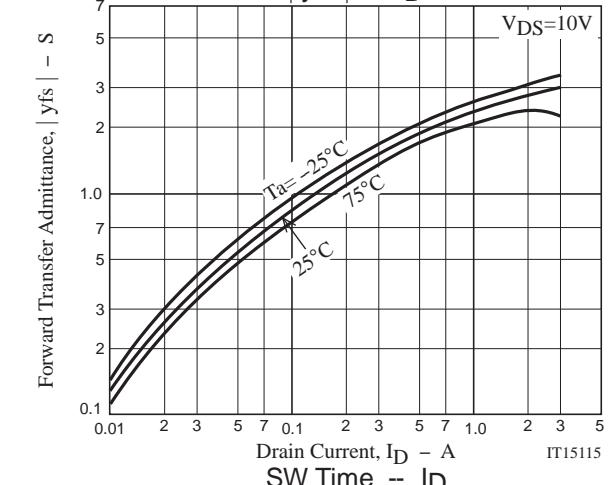
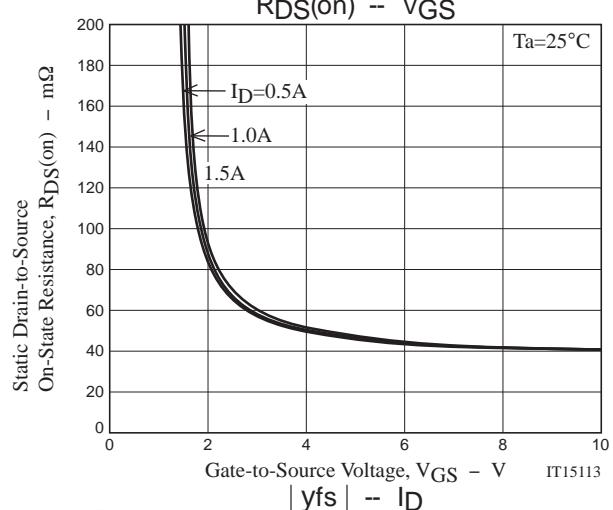
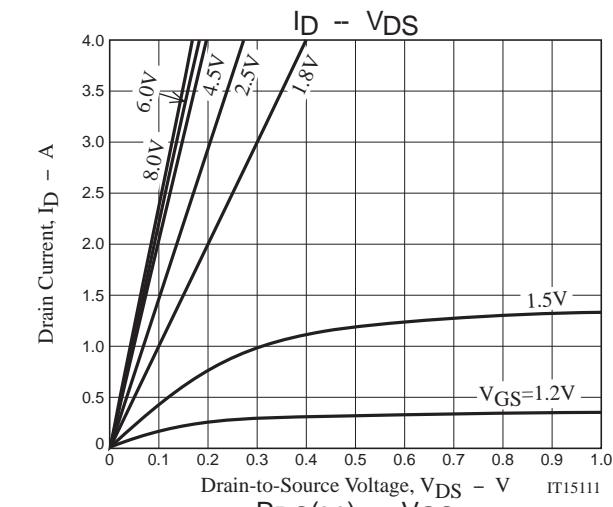


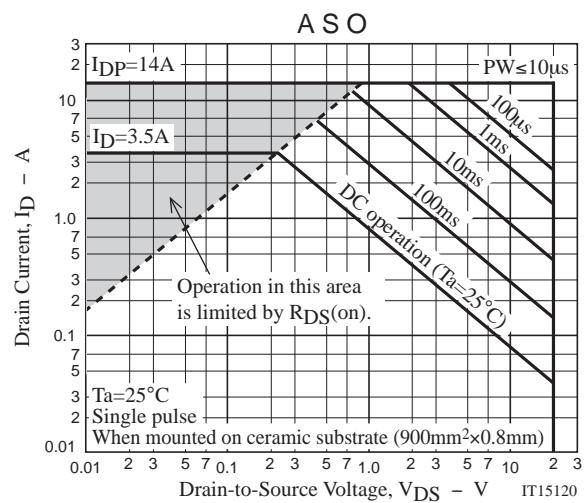
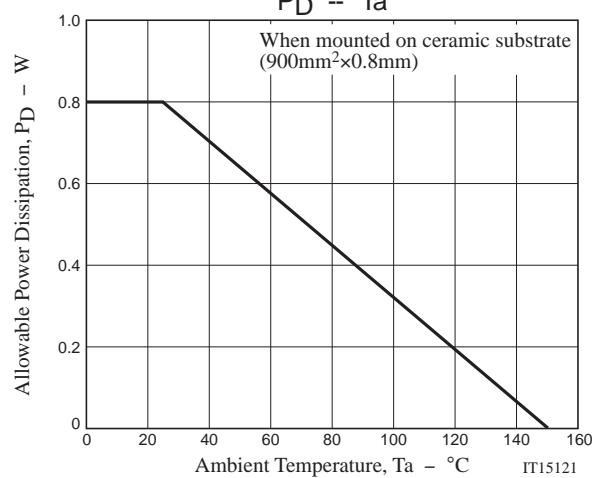
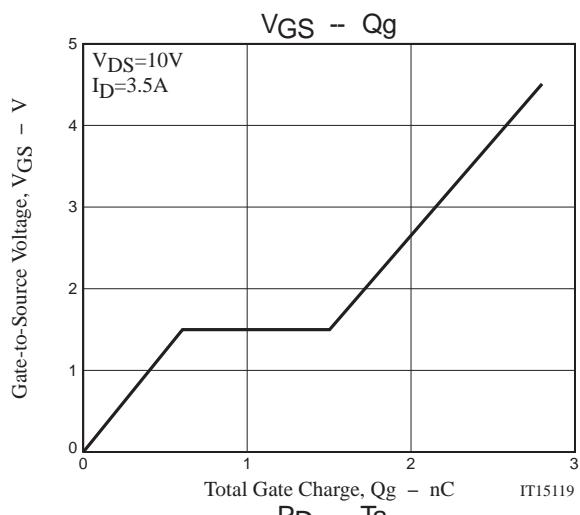
**Electrical Characteristics** at  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(\text{BR})\text{DSS}}$	$I_D=1\text{mA}, V_{GS}=0\text{V}$	20			V
Zero-Gate Voltage Drain Current	$I_{\text{DSS}}$	$V_{DS}=20\text{V}, V_{GS}=0\text{V}$			1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{\text{GSS}}$	$V_{GS}=\pm 8\text{V}, V_{DS}=0\text{V}$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(\text{off})}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	0.4		1.3	V
Forward Transfer Admittance	$ y_{\text{fs}} $	$V_{DS}=10\text{V}, I_D=1.5\text{A}$	1.68	2.8		S
Static Drain-to-Source On-State Resistance	$R_{DS(\text{on})1}$	$I_D=1.5\text{A}, V_{GS}=4.5\text{V}$		49	64	$\text{m}\Omega$
	$R_{DS(\text{on})2}$	$I_D=1\text{A}, V_{GS}=2.5\text{V}$		68	95	$\text{m}\Omega$
	$R_{DS(\text{on})3}$	$I_D=0.5\text{A}, V_{GS}=1.8\text{V}$		99	149	$\text{m}\Omega$
Input Capacitance	$C_{\text{iss}}$	$V_{DS}=10\text{V}, f=1\text{MHz}$		260		$\text{pF}$
Output Capacitance	$C_{\text{oss}}$			65		$\text{pF}$
Reverse Transfer Capacitance	$C_{\text{rss}}$			50		$\text{pF}$
Turn-ON Delay Time	$t_{\text{d(on)}}$	See specified Test Circuit.		6.2		ns
Rise Time	$t_r$			19		ns
Turn-OFF Delay Time	$t_{\text{d(off)}}$			30		ns
Fall Time	$t_f$			28		ns
Total Gate Charge	$Q_g$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=3.5\text{A}$		2.8		$\text{nC}$
Gate-to-Source Charge	$Q_{\text{gs}}$			0.6		$\text{nC}$
Gate-to-Drain "Miller" Charge	$Q_{\text{gd}}$			0.9		$\text{nC}$
Diode Forward Voltage	$V_{\text{SD}}$	$I_S=3.5\text{A}, V_{GS}=0\text{V}$		0.85	1.2	V

**Switching Time Test Circuit****Ordering Information**

Device	Package	Shipping	memo
SCH1433-TL-H	SCH6	5,000pcs./reel	Pb Free and Halogen Free





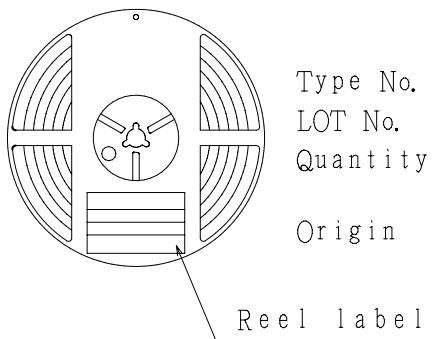
## Taping Specification

SCH1433-TL-H

## 1. Packing Format

Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
SCH6	SCH6	5,000	25,000	150,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

## Packing method



## Reel label, Inner box label

(unit:mm)

Type No.

LOT No.

Quantity

Origin

(P) TYPE 0000000000
(1D) LOT 00
(Q) QTY 0,000 (1) LEAD FREE *
(2) SPECIAL
*Z0722005310C*
ASSEMBLY:**** ( DIFFUSION:**** )

## Outer box label

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

TYPE CODE	
*0000000000*	
TYPE	
0000000000	
QTY	
0.000 PCS (1) LEAD FREE *	
LOT	
0000000000	
PACKAGE	
0000000000	
SPECIAL	
*Z0722005310C*	
ASSEMBLY:**** ( DIFFUSION:**** )	

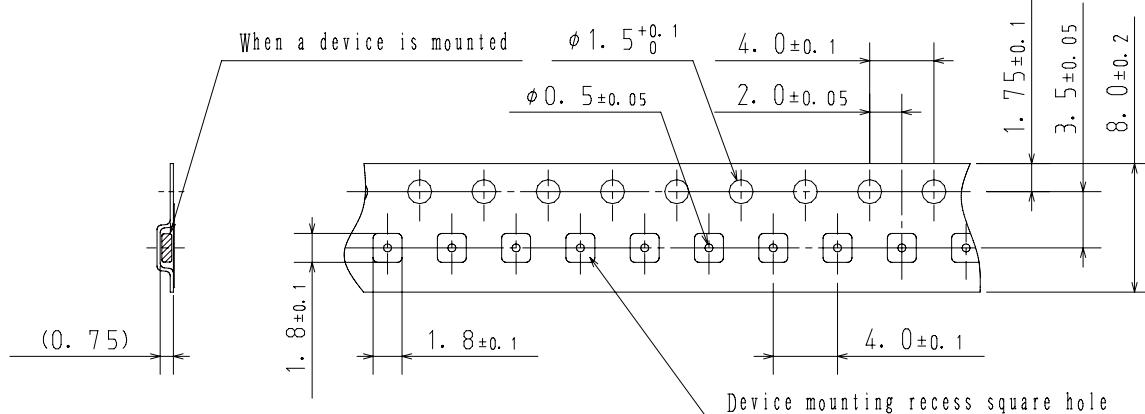
## NOTE (1)

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

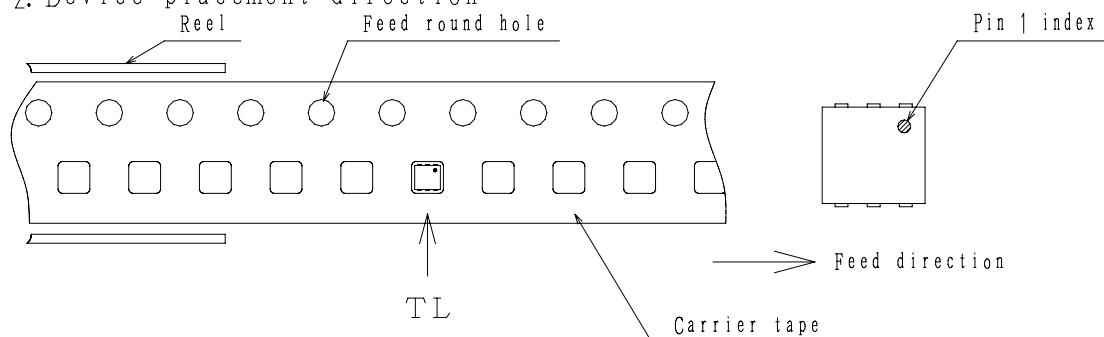
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

## 2. Taping configuration

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



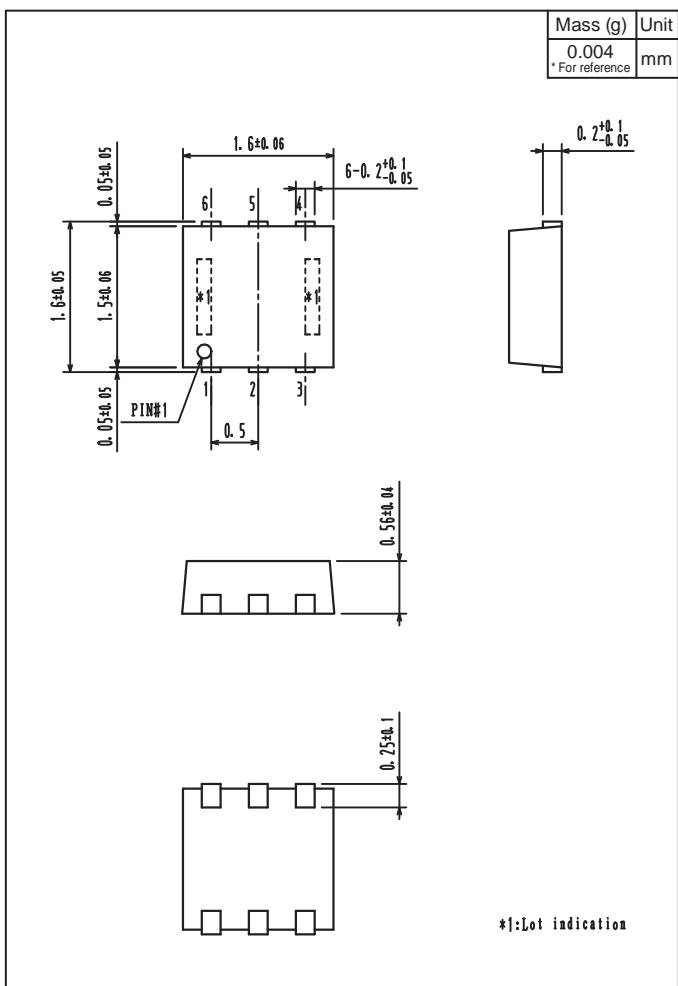
## 2-2. Device placement direction



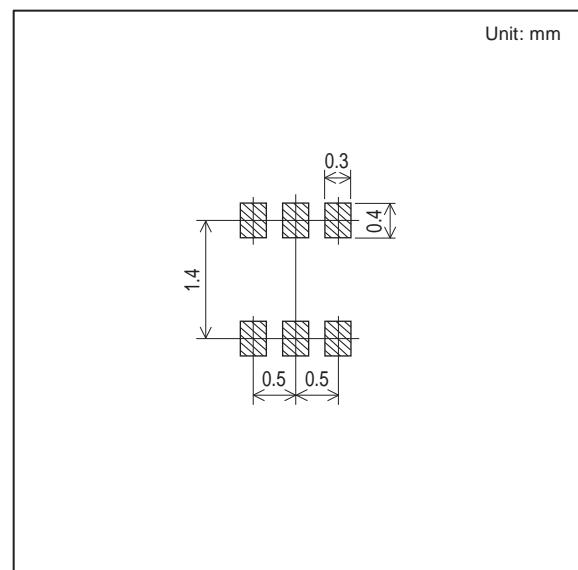
Those with pin 1 index on the feed hole side.....TL

## Outline Drawing

SCH1433-TL-H



## Land Pattern Example



Note on usage : Since the SCH1433 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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