



# 2SK4066

## N-Channel Power MOSFET 60V, 100A, 4.7mΩ, TO-262-3L/TO-263-2L

ON Semiconductor®

<http://onsemi.com>

### Features

- ON-resistance  $R_{DS(on)1}=3.6m\Omega$ (typ.)
- 4V drive
- Input capacitance  $C_{iss}=12500pF$  (typ.)

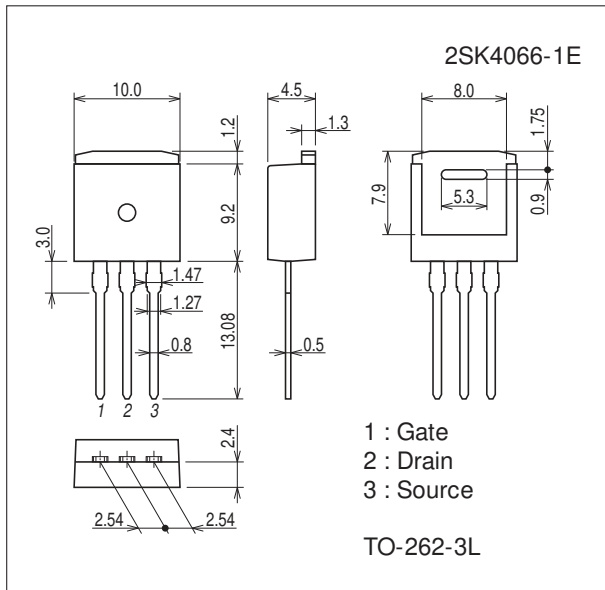
### Specifications

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

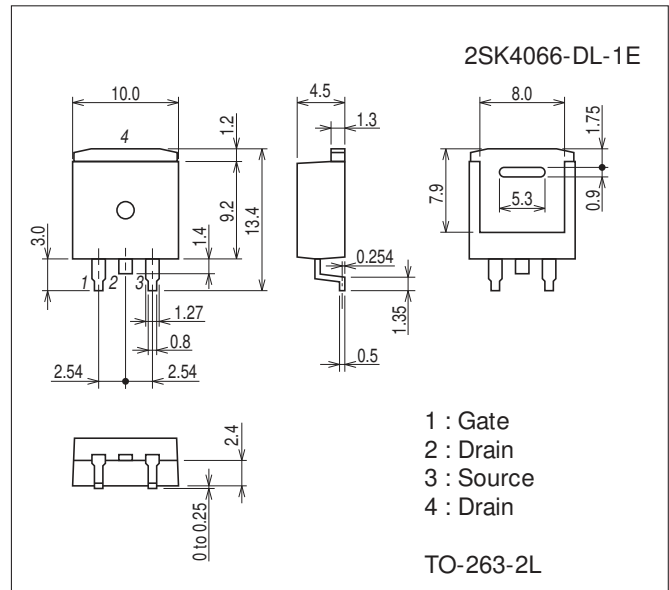
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		60	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		100	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	400	A
Allowable Power Dissipation	PD		1.65	W
		$T_c=25^\circ C$	90	W

Continued on next page.

**Package Dimensions** unit : mm (typ)  
7537-001



**Package Dimensions** unit : mm (typ)  
7535-001

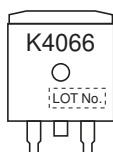


### Product & Package Information

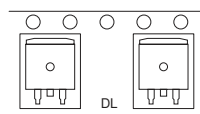
- Package : TO-262-3L
- JEITA, JEDEC : TO-262
- Minimum Packing Quantity : 50pcs./magazine

- Package : TO-263-2L
- JEITA, JEDEC : SC-83, TO-263
- Minimum Packing Quantity : 800pcs./reel

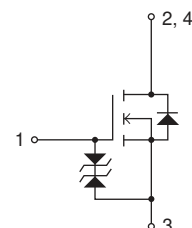
### Marking



### Packing Type : DL



### Electrical Connection



# 2SK4066

Continued from preceding page.

Parameter	Symbol	Conditions	Ratings	Unit
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	EAS		850	mJ
Avalanche Current *2	I <sub>AV</sub>		70	A

Note : \*1 V<sub>DD</sub>=30V, L=200μH, I<sub>AV</sub>=70A (Fig.1)

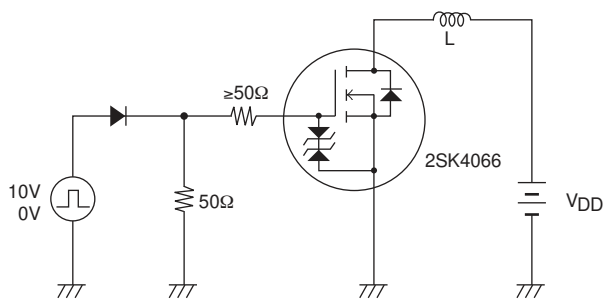
\*2 L≤200μH, single pulse

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

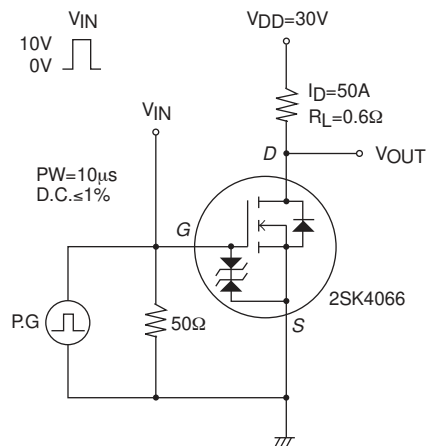
## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I <sub>D</sub> =1mA, V <sub>GS</sub> =0V	60			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V			1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	1.2		2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =50A	51	85		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =50A, V <sub>GS</sub> =10V		3.6	4.7	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =50A, V <sub>GS</sub> =4V		4.7	6.6	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =20V, f=1MHz		12500		pF
Output Capacitance	C <sub>oss</sub>			1200		pF
Reverse Transfer Capacitance	C <sub>rss</sub>			950		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See Fig.2		80		ns
Rise Time	t <sub>r</sub>			630		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>			860		ns
Fall Time	t <sub>f</sub>			750		ns
Total Gate Charge	Q <sub>g</sub>		V <sub>DS</sub> =30V, V <sub>GS</sub> =10V, I <sub>D</sub> =100A		220	
Gate-to-Source Charge	Q <sub>gs</sub>			31		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>			55		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =100A, V <sub>GS</sub> =0V		0.9	1.2	V

**Fig.1 Avalanche Resistance Test Circuit**

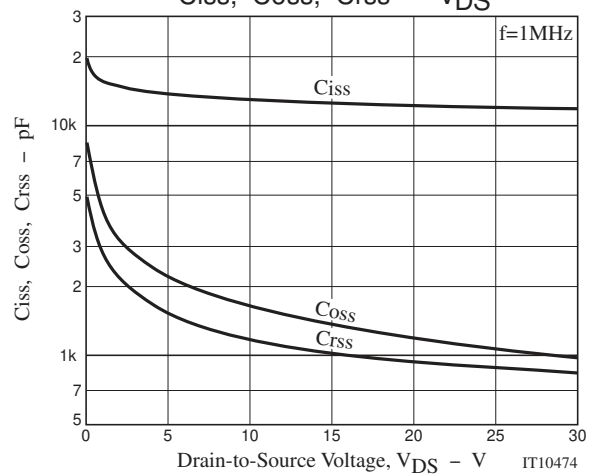
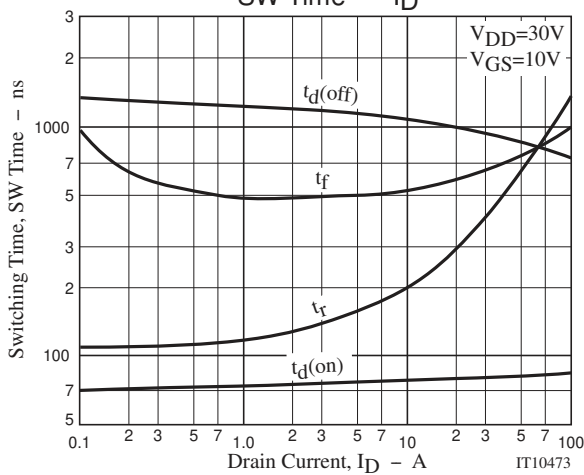
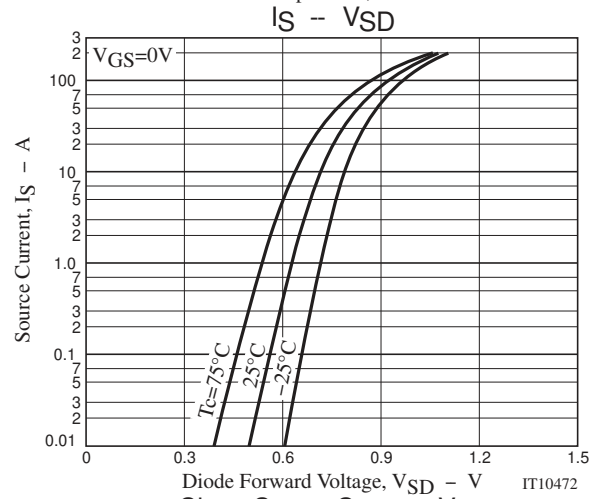
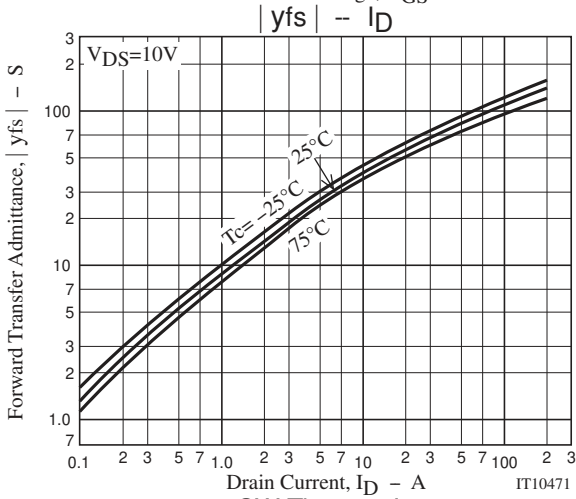
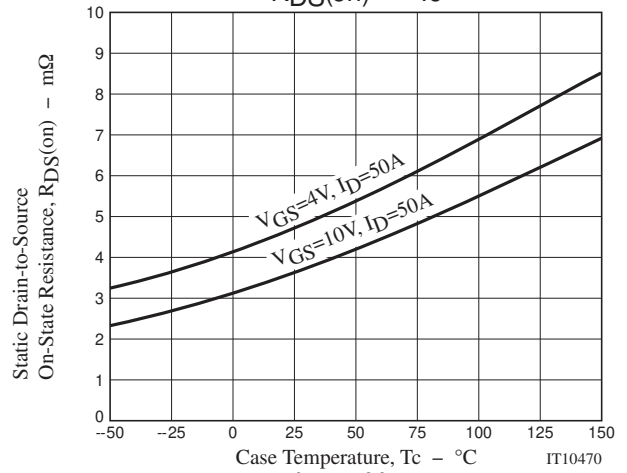
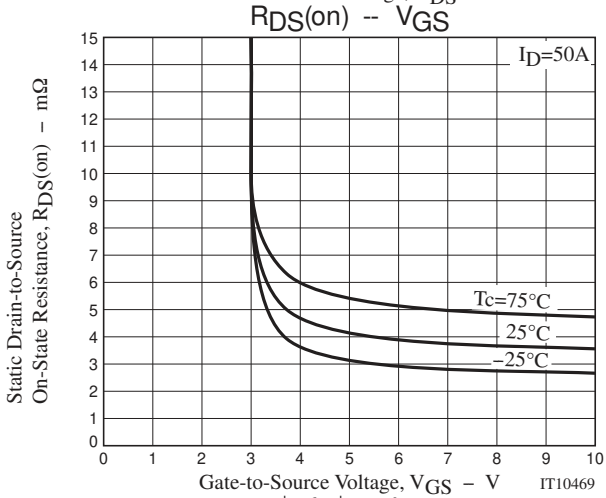
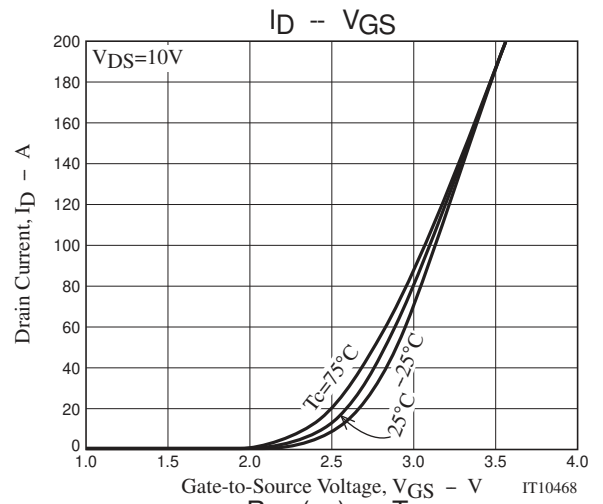
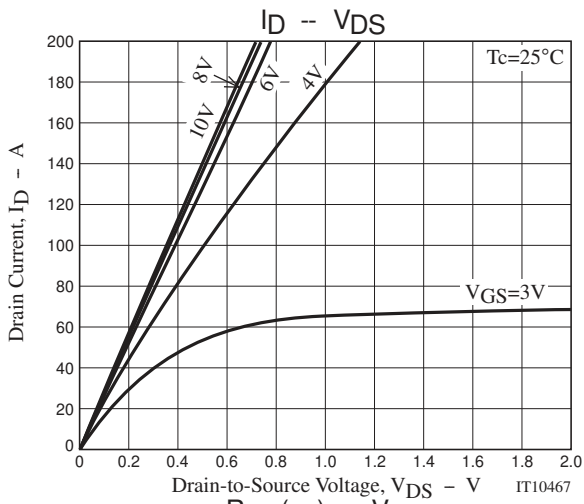


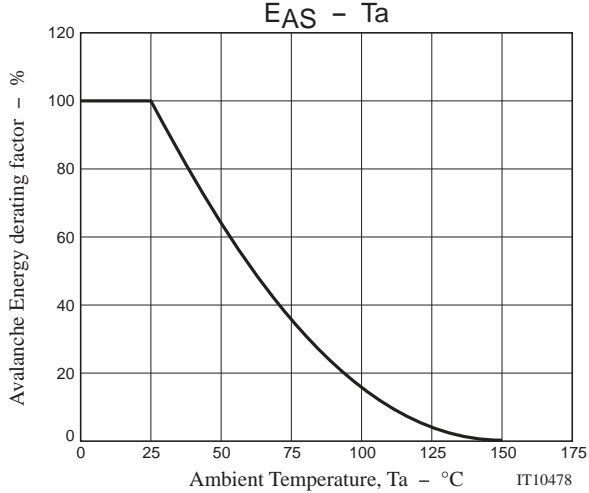
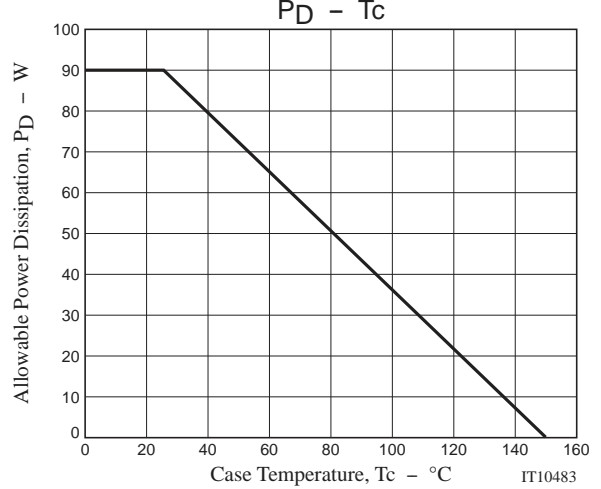
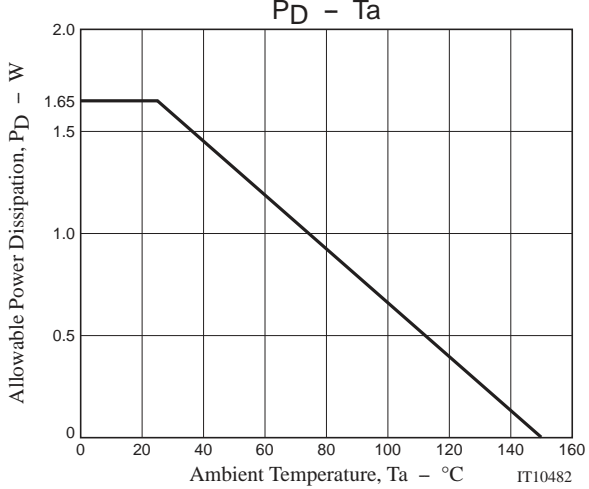
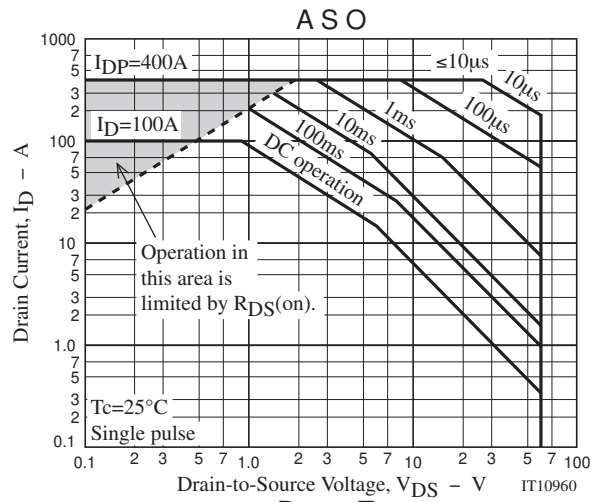
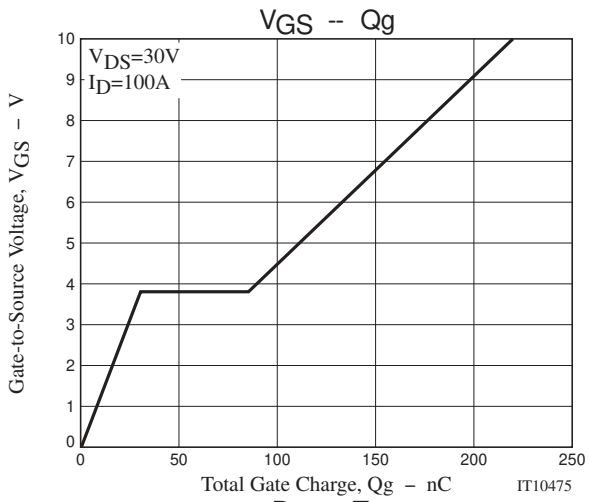
**Fig.2 Switching Time Test Circuit**



## Ordering Information

Device	Package	Shipping	memo
2SK4066-1E	TO-262-3L	50pcs./magazine	Pb Free
2SK4066-DL-1E	TO-263-2L	800pcs./reel	





Taping Specification

2SK4066-DL-1E

1. Packing Format

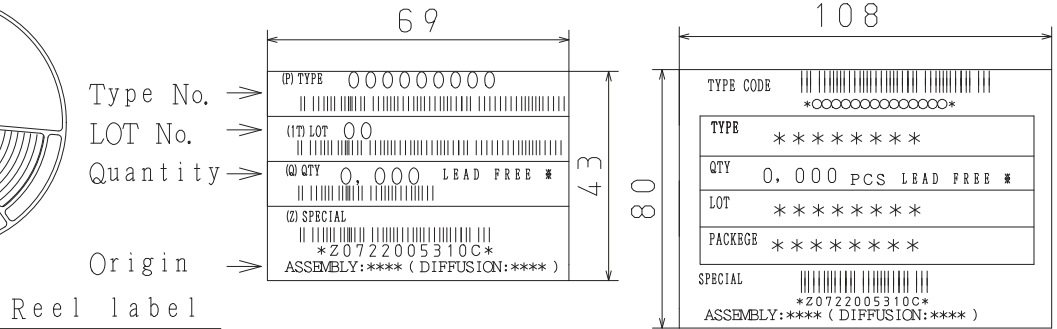
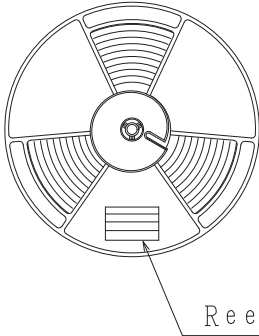
Package Name	Maximum Number of devices contained (pcs)			Packing format	
	Reel	Inner box	Outer box	Inner BOX	Outer BOX
TO-263-2L	800	1600	6400	SPD-0V0011 2 reel contained Dimensions:mm (external) 351×340×68	SPD-0V0009 4 inner boxes contained Dimensions:mm (external) 390×370×318

Reel label, Inner box label (unit:mm)

Outer box label

Packing method

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



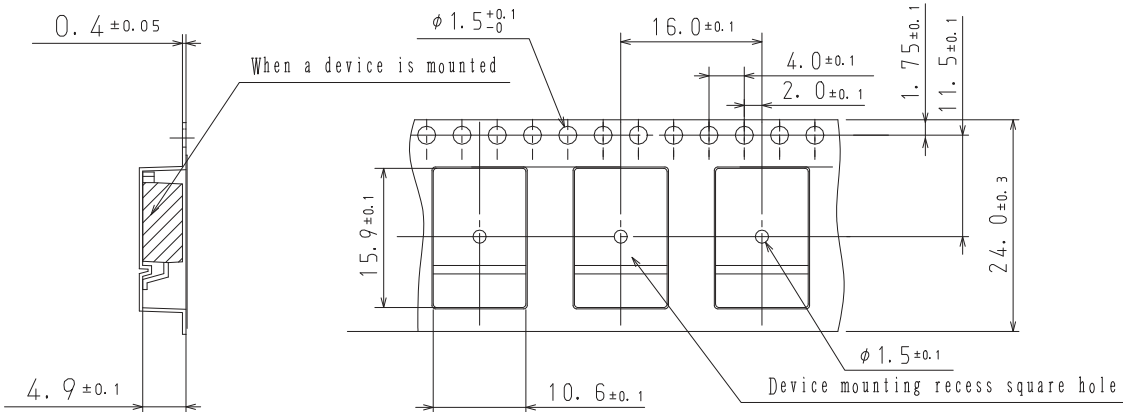
NOTE (1)

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

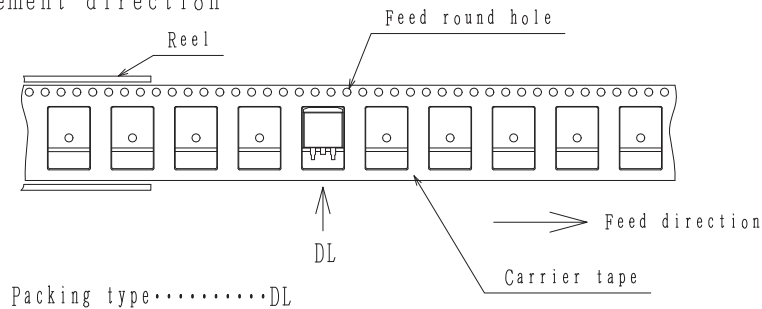
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A

2. Taping configuration

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



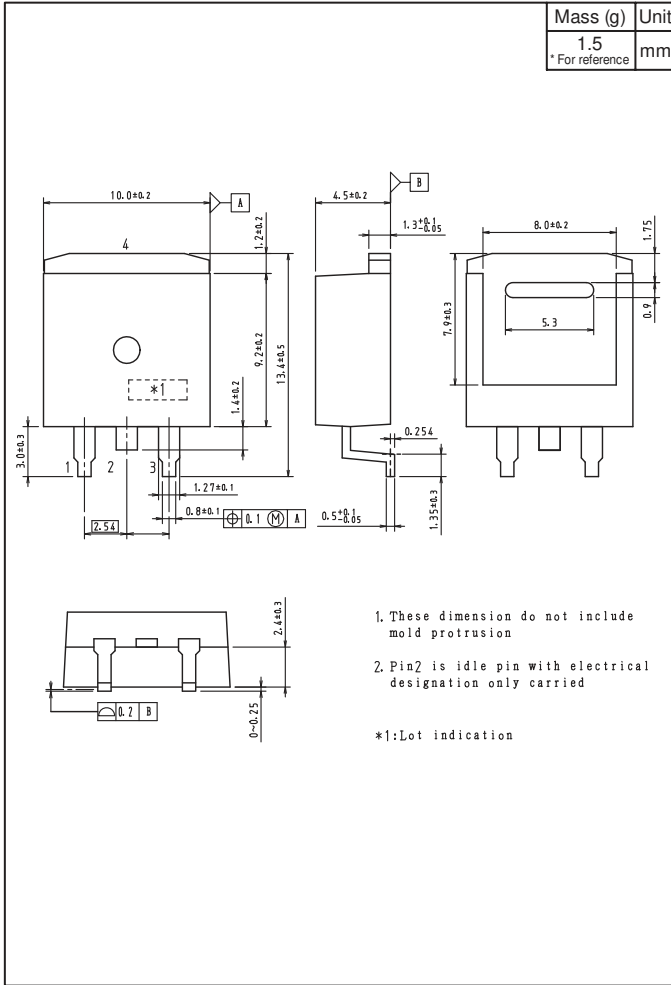
2-2. Device placement direction



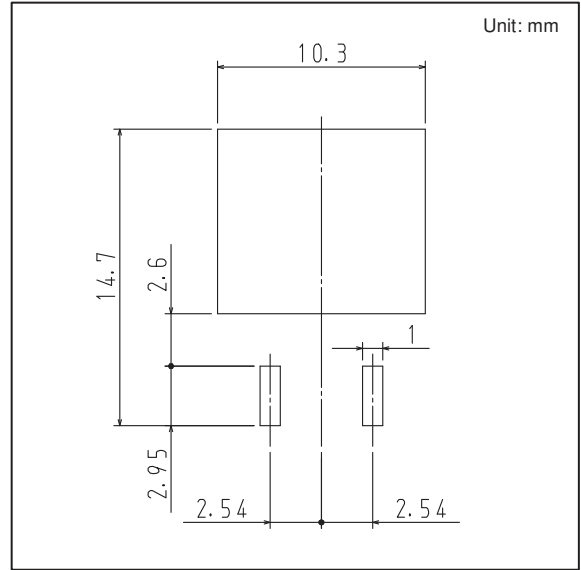
# 2SK4066

## Outline Drawing

2SK4066-DL-1E



## Land Pattern Example



Magazine Specification

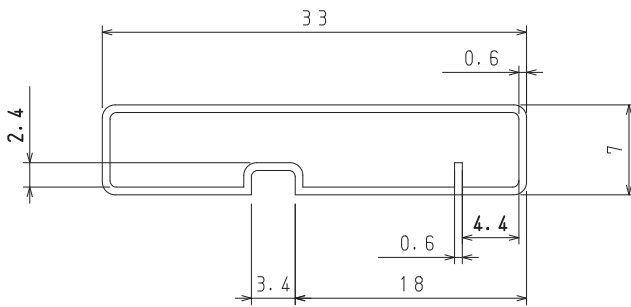
2SK4066-1E

1. Packing Format

Package Name	Maximum Number of devices contained (pcs)			Packing format	
	Magazine	Inner box	Outer box	Inner BOX	Outer BOX
TO-262-3L	50	1,000	4000	SPD-0V0001 20 magazines contained Dimensions:mm (external) 568×150×55	SPD-LV0010 4 inner boxes contained Dimensions:mm (external) 590×225×178

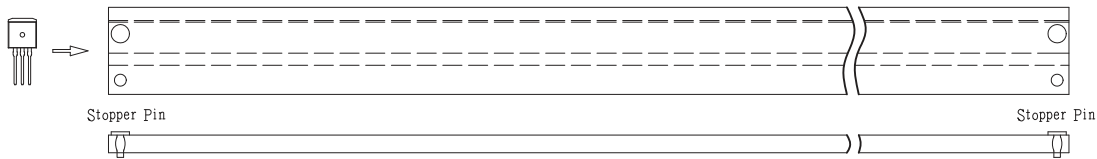
2. Magazine dimensions

(unit:mm)

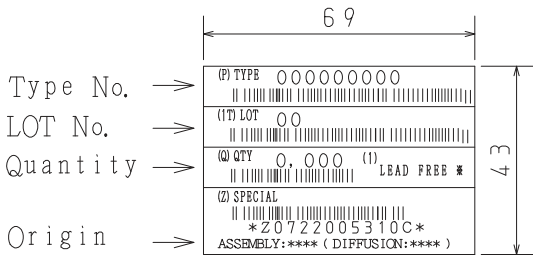


Tolerance=±0.2mm  
 Thickness=0.6+0.2/-0mm  
 Length =512.6±1mm  
 Material =PVC (Antistatic treatment)

3. Storage method to magazine

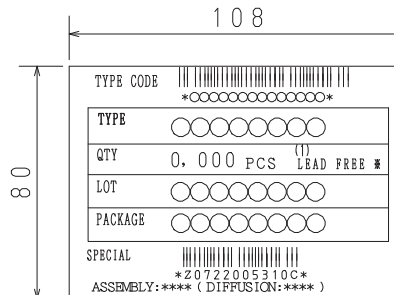


4. Inner box label (unit:mm)



5. Outer box label (unit:mm)

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



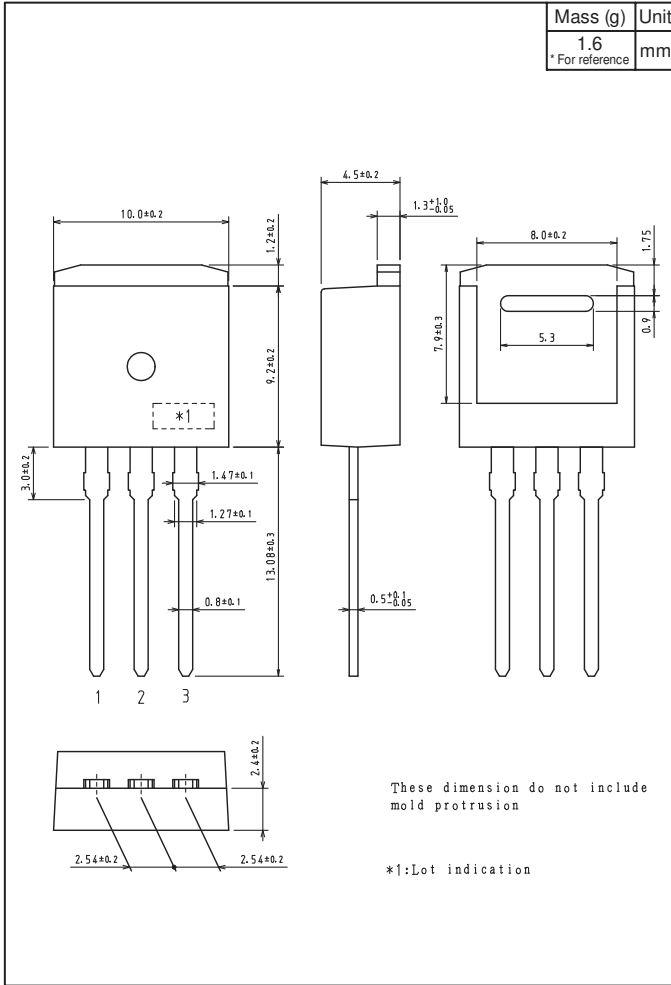
NOTE (1)

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

Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A

Outline Drawing

2SK4066-1E





Note on usage : Since the 2SK4066 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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