

2SK4125 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- ON-resistance $R_{DS(on)}=0.47\Omega$ (typ.)
- Input capacitance $C_{iss}=1200pF$ (typ.)
- 10V drive

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		17	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	52	A
Allowable Power Dissipation	P_D		2.5	W
		$T_c=25^\circ C$ (SANYO's ideal heat dissipation condition)*1	170	W
Channel Temperature	T_{ch}		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$
Avalanche Energy (Single Pulse) *2	E_{AS}		78.8	mJ
Avalanche Current *3	I_{AV}		17	A

*1 SANYO's condition is radiation from backside.

The method is applying silicone grease to the backside of the device and attaching the device to water-cooled radiator made of aluminium.

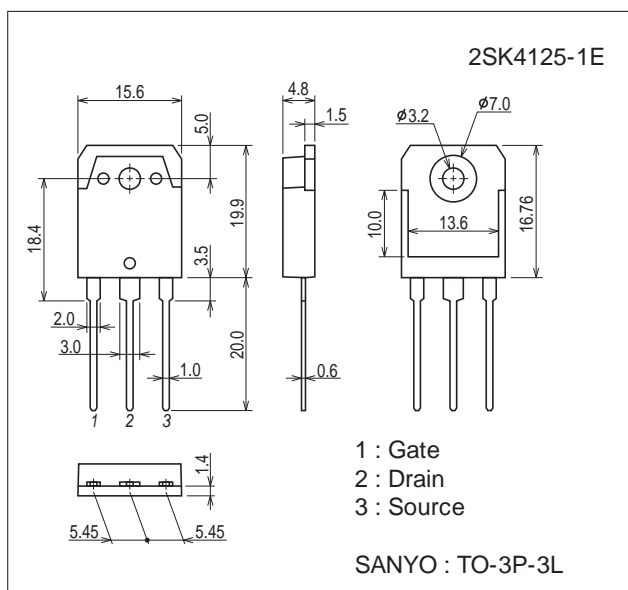
*2 $V_{DD}=50V$, $L=500\mu H$, $I_{AV}=17A$ (Fig.1)

*3 $L \leq 500\mu H$, single pulse

Package Dimensions

unit : mm (typ)

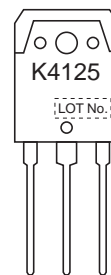
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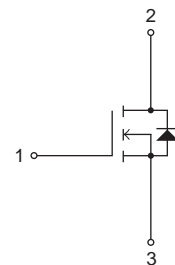
Product & Package Information

- Package : TO-3P-3L
- JEITA, JEDEC : SC-65, TO-247, SOT-199
- Minimum Packing Quantity : 30 pcs./magazine

Marking



Electrical Connection



2SK4125

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit	
			min	typ	max		
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=10mA, VGS=0V	600			V	
Zero-Gate Voltage Drain Current	IDSS	VDS=480V, VGS=0V			100	μA	
Gate-to-Source Leakage Current	IGSS	VGS=±30V, VDS=0V			±100	nA	
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	3		5	V	
Forward Transfer Admittance	yfs	VDS=10V, ID=8.5A	4.5	9		S	
Static Drain-to-Source On-State Resistance	RDS(on)	ID=7A, VGS=10V		0.47	0.61	Ω	
Input Capacitance	Ciss	VDS=30V, f=1MHz		1200		pF	
Output Capacitance	Coss				220		pF
Reverse Transfer Capacitance	Crss				50		pF
Turn-ON Delay Time	td(on)	See Fig.2		26.5		ns	
Rise Time	tr				82		ns
Turn-OFF Delay Time	td(off)				145		ns
Fall Time	tf				52		ns
Total Gate Charge	Qg				46		nC
Gate-to-Source Charge	Qgs	VDS=200V, VGS=10V, ID=17A		8.3		nC	
Gate-to-Drain "Miller" Charge	Qgd			26.7		nC	
Diode Forward Voltage	VSD		IS=17A, VGS=0V		1.0	1.3	V

Fig.1 Avalanche Resistance Test Circuit

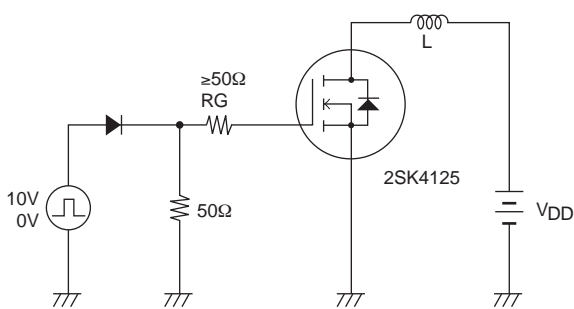
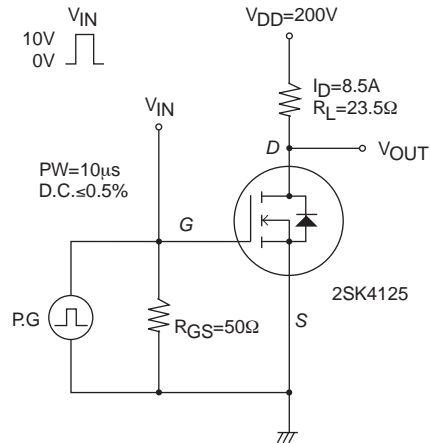
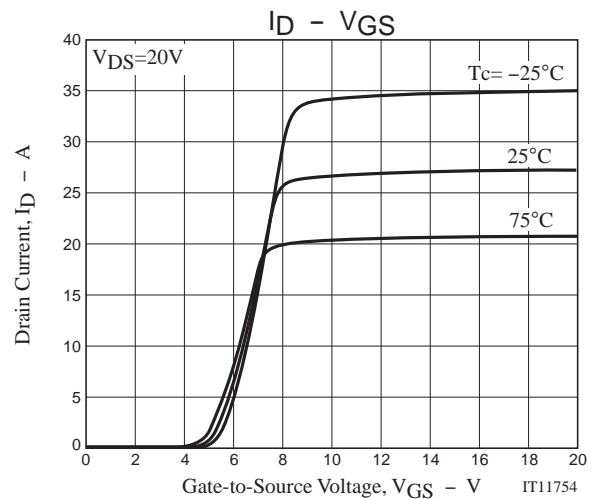
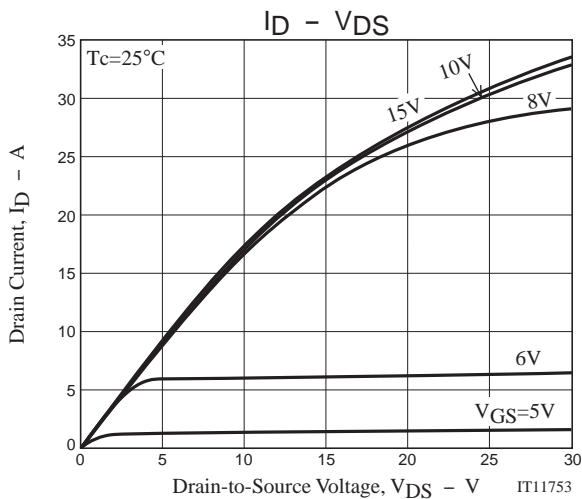


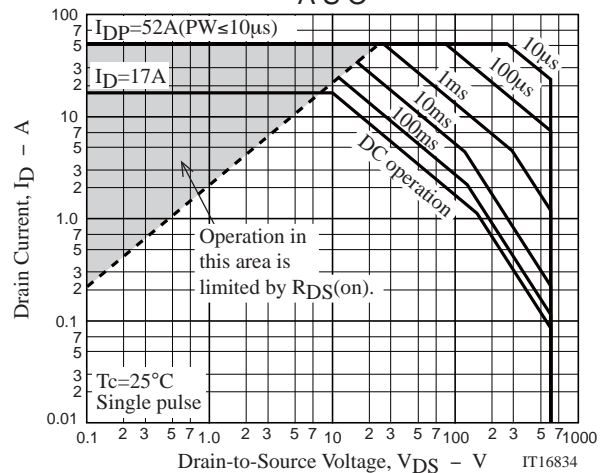
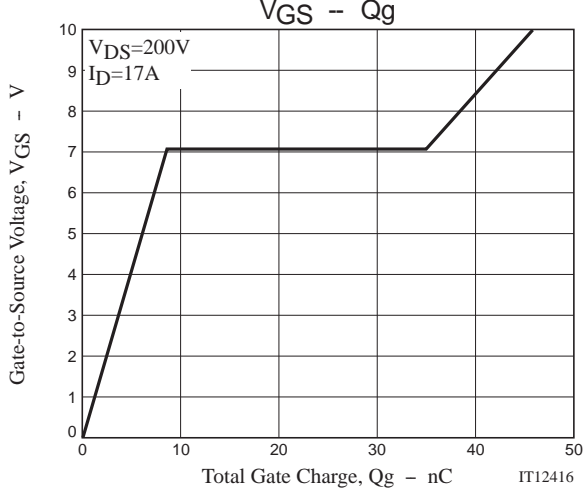
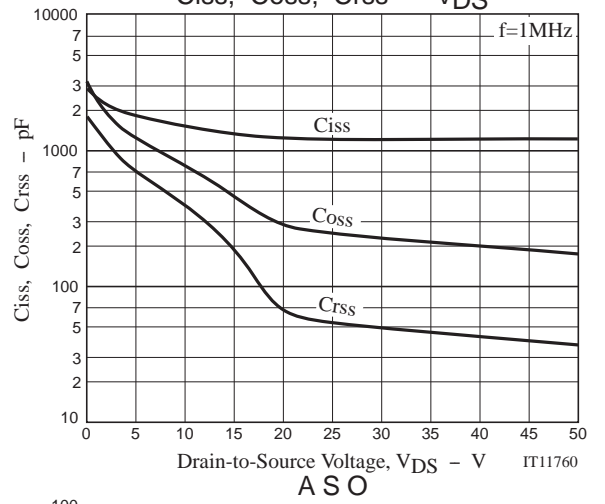
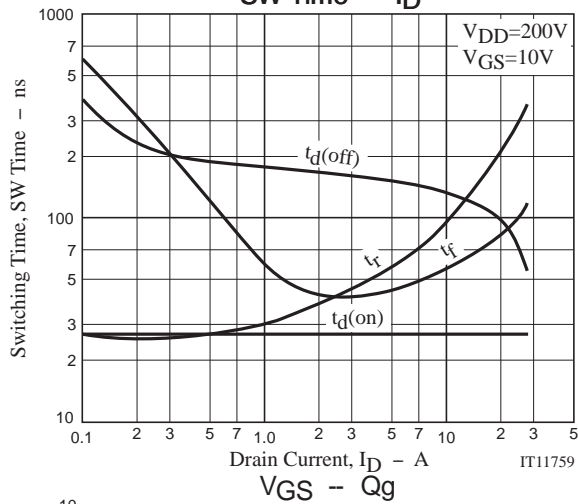
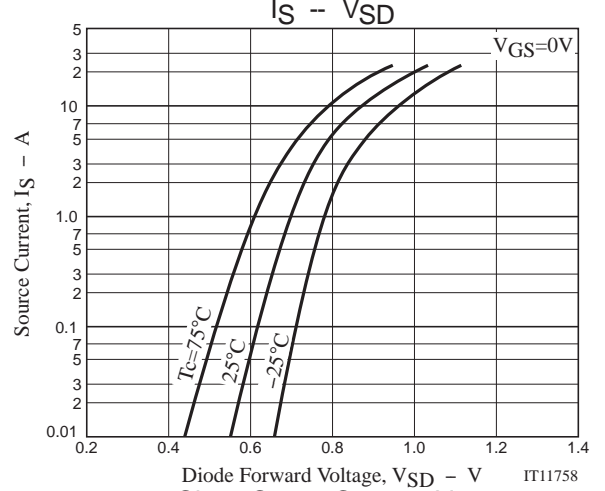
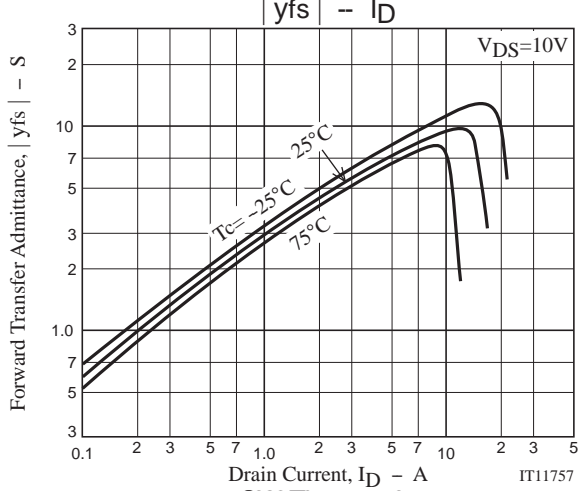
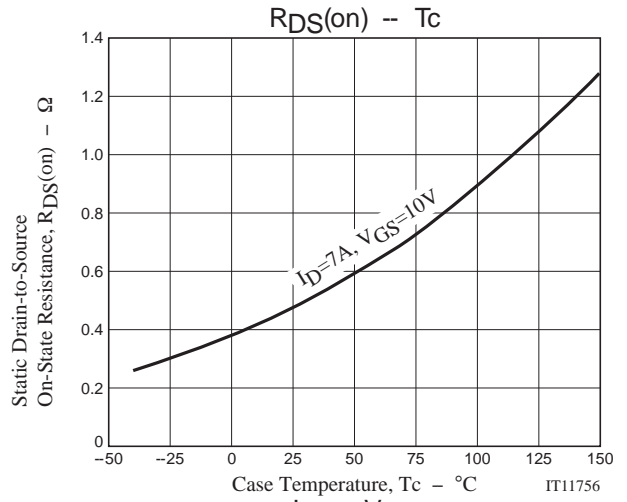
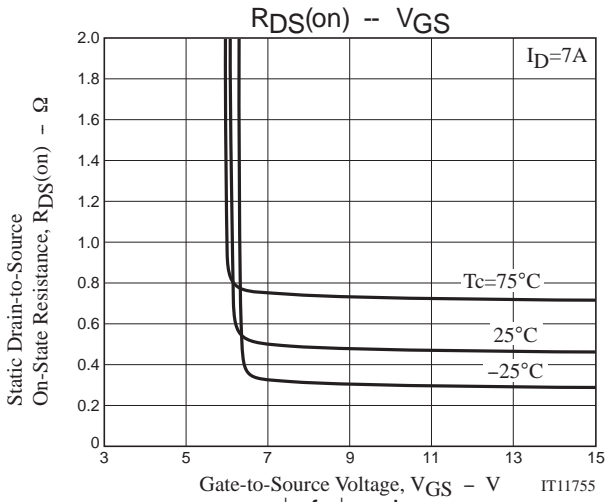
Fig.2 Switching Time Test Circuit



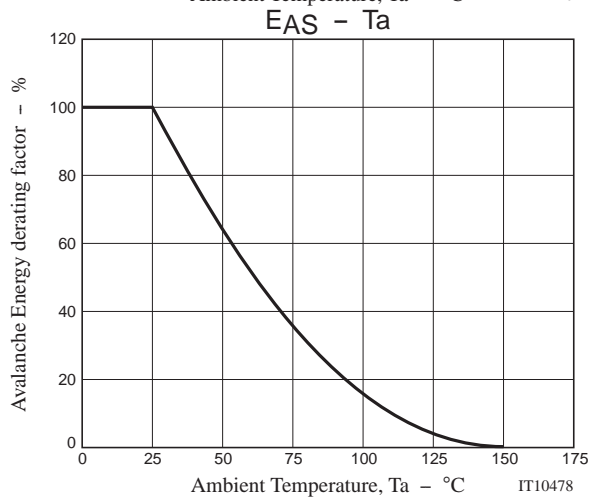
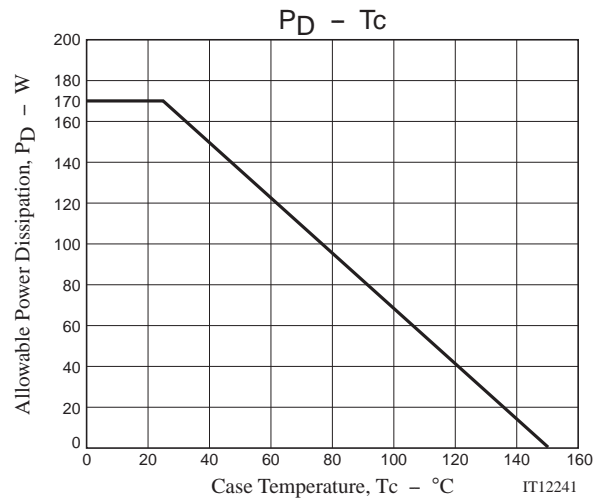
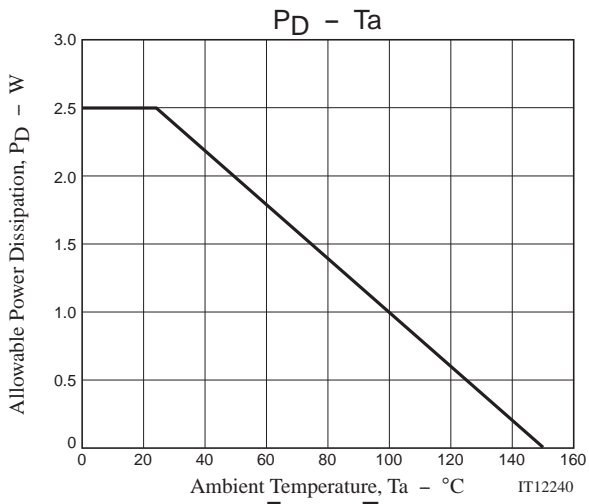
Ordering Information

Device	Package	Shipping	memo
2SK4125-1E	TO-3P-3L	30pcs./magazine	Pb Free





2SK4125



Magazine Specification

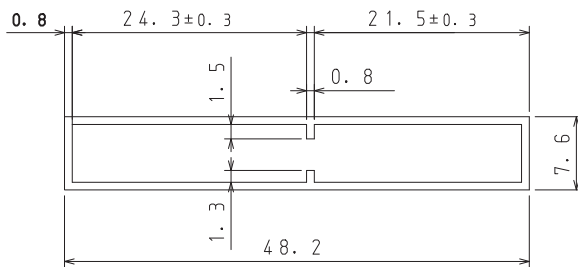
2SK4125-1E

1. Packing Format

Package Name	Maximum Number of devices contained (pcs)			Packing format	
	Magazine	Inner box	Outer box	Inner BOX	Outer BOX
TO-3P-3L	30	450	1800	SPD-0V0001 15 magazines contained Dimensions:mm (external) 568×150×55	SPD-LV0010 4 inner boxes contained Dimensions:mm (external) 590×225×178

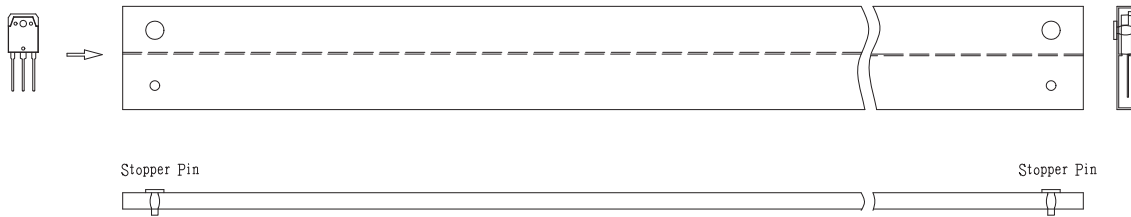
2. Magazine dimensions

(unit:mm)



Tolerance=±0.2mm
 Thickness=0.8±0.2mm
 Length =508.0±1mm
 Material =PVC or PET
 (Antistatic treatment)

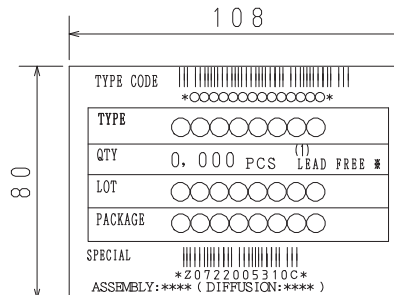
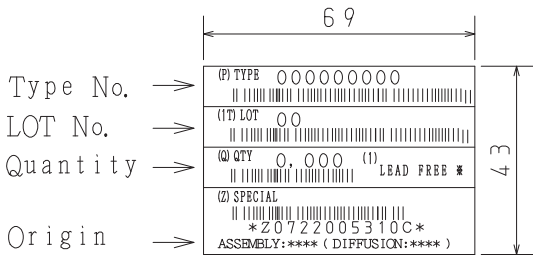
3. Storage method to magazine



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.



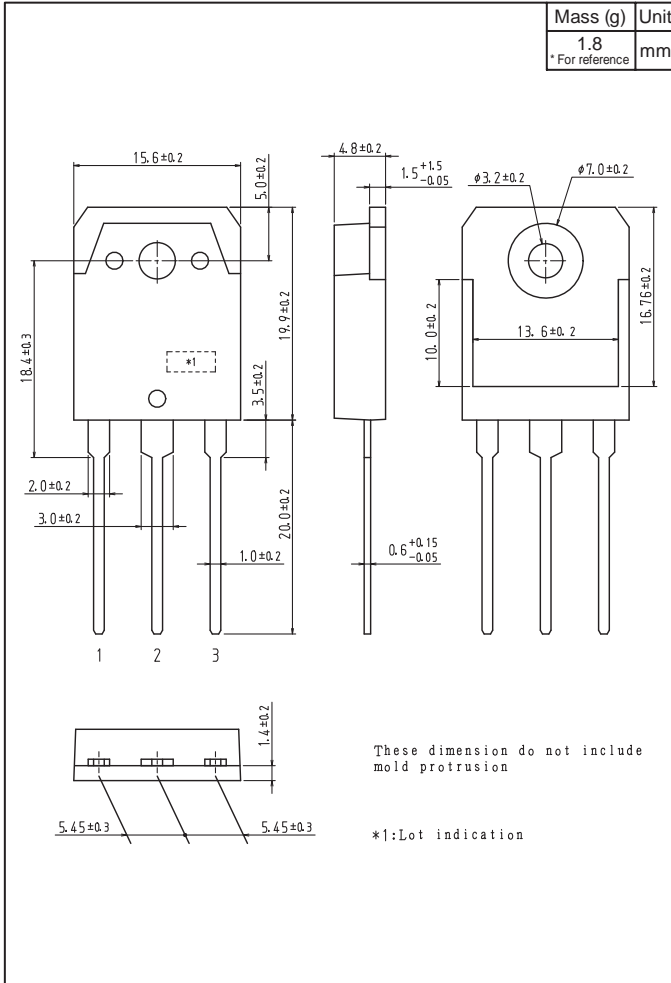
NOTE (1)
 The LEAD FREE * description shows that the surface treatment of the terminal is lead free,

Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A

2SK4125

Outline Drawing

2SK4125-1E



Note on usage : Since the 2SK4125 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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