



SANYO Semiconductors

DATA SHEET

2SK3093LS — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Low Qg.
- Ultrahigh-Speed Switching Applications.
- Avalanche resistance guarantee.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		400	V
Gate-to-Source Voltage	V _{GSS}		±30	V
Drain Current (DC)	I _D		3	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	12	A
Allowable Power Dissipation	P _D		2.0	W
		T _c =25°C	20	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E _{AS}		51.4	mJ
Avalanche Current *2	I _{AV}		3	A

*1 V_{DD}=50V, L=10mH, I_{AV}=3A

*2 L≤10mH, single pulse

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =1mA, V _{GS} =0V	400			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =320V, V _{GS} =0V			1.0	mA
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	3.0		4.0	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =1.5A	0.7	1.4		S
Static Drain-to-Source On-State Resistance	R _{DS(on)}	I _D =1.5A, V _{GS} =15V		1.8	2.3	Ω

Marking : K3093

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2SK3093LS

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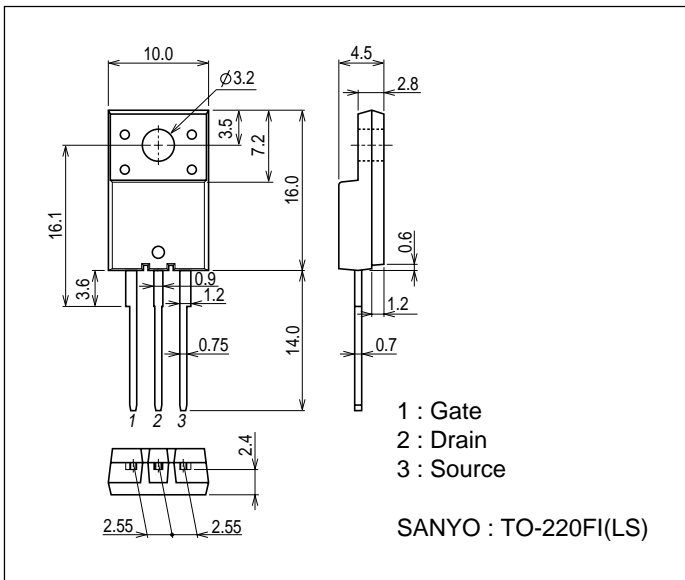
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =20V, f=1MHz		360		pF
Output Capacitance	Coss	V _{DS} =20V, f=1MHz		90		pF
Reverse Transfer Capacitance	Crss	V _{DS} =20V, f=1MHz		45		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		10		ns
Rise Time	t _r	See specified Test Circuit.		10		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		28		ns
Fall Time	t _f	See specified Test Circuit.		17		ns
Total Gate Charge	Q _g	V _{DS} =200V, V _{GS} =10V, I _D =3A		10		nC
Diode Forward Voltage	V _{SD}	I _S =3A, V _{GS} =0V		0.85	1.2	V

Note : Be careful in handling the 2SK3093LS because it has no protection diode between gate and source.

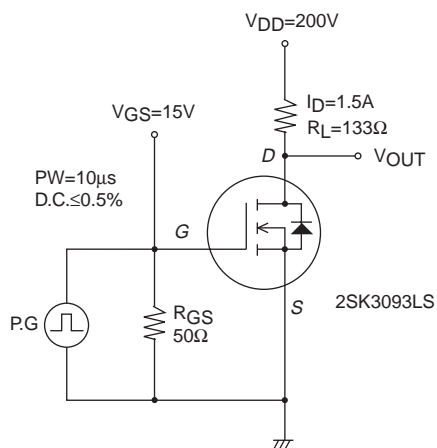
Package Dimensions

unit : mm (typ)

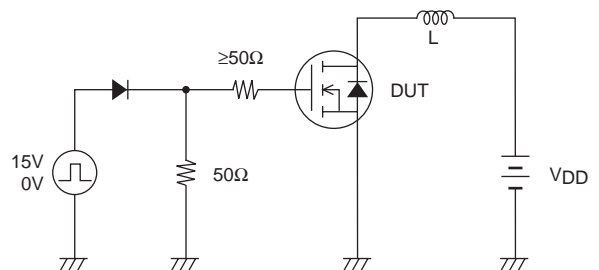
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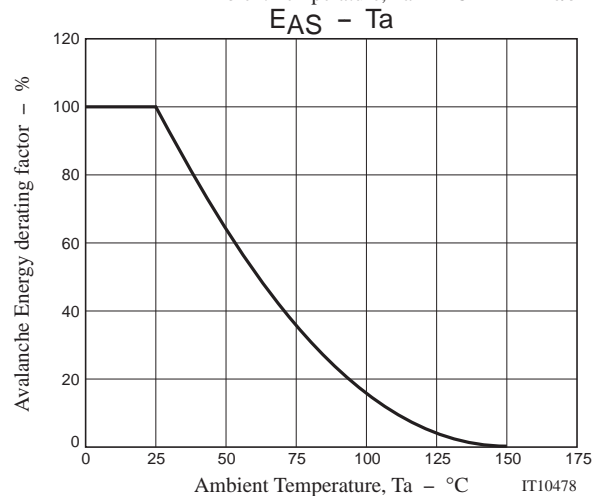
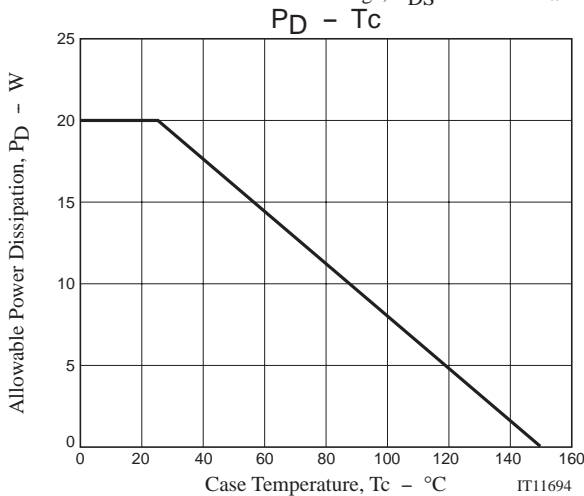
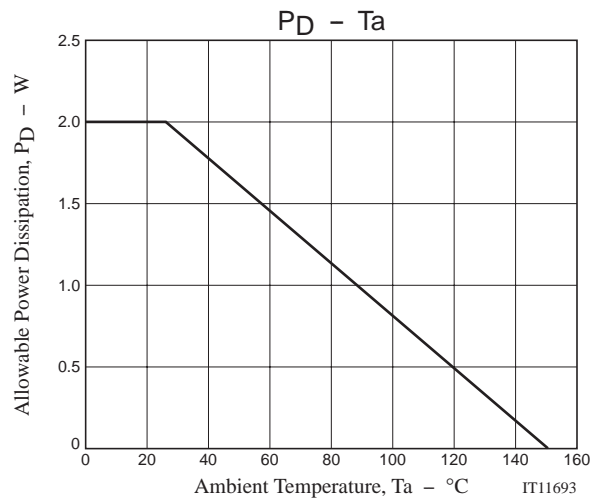
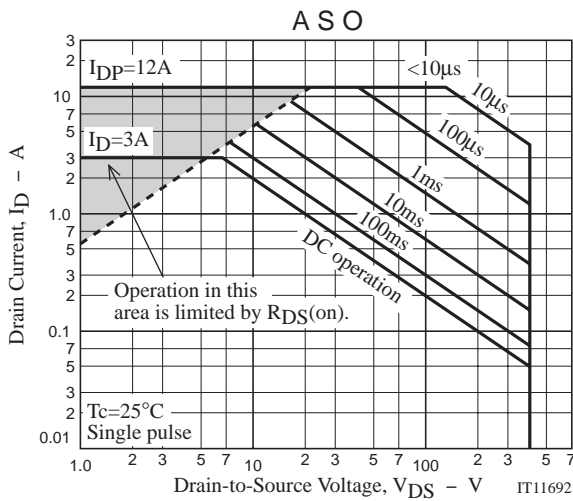
Switching Time Test Circuit



Avalanche Resistance Test Circuit



2SK3093LS



Note on usage : Since the 2SK3093LS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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