



SANYO Semiconductors

## DATA SHEET

# 2SK3098 — N-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- High-speed switching.
- 15V drive.

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		400	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 30$	V
Drain Current (DC)	$I_D$		12	A
Drain Current (Pulse)	$I_{DP}$		48	A
Allowable Power Dissipation	$P_D$	$T_c=25^\circ\text{C}$	85	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}, V_{GS}=0\text{V}$	400			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=320\text{V}, V_{GS}=0\text{V}$			1.0	mA
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 30\text{V}, V_{DS}=0\text{V}$			$\pm 100$	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	3		4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}, I_D=6\text{A}$	2.9	5.8		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=6\text{A}, V_{GS}=15\text{V}$		0.43	0.55	$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=20\text{V}, f=1\text{MHz}$		1150		pF
Output Capacitance	$C_{oss}$	$V_{DS}=20\text{V}, f=1\text{MHz}$		350		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20\text{V}, f=1\text{MHz}$		150		pF

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# 2SK3098

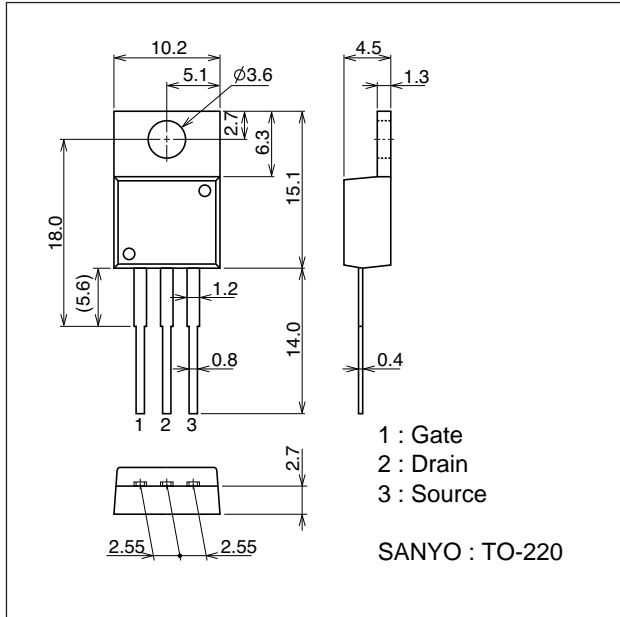
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	$Q_g$	$V_{DS}=200V, I_D=12A, V_{GS}=10V$		40		nC
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		20		ns
Rise Time	$t_r$	See specified Test Circuit.		35		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		85		ns
Fall Time	$t_f$	See specified Test Circuit.		45		ns
Diode Forward Voltage	$V_{SD}$	$I_S=12A, V_{GS}=0V$			1.2	V

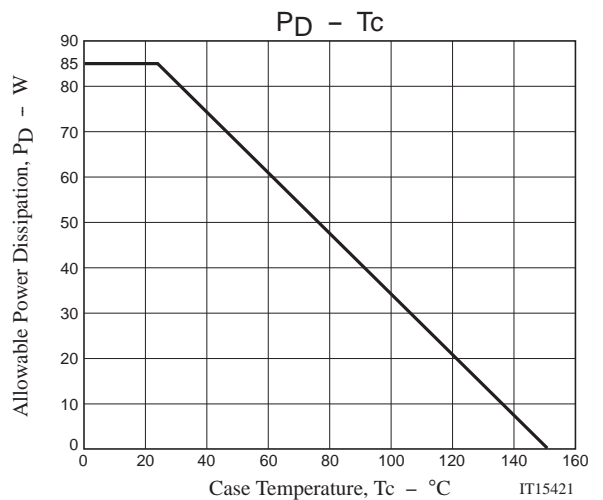
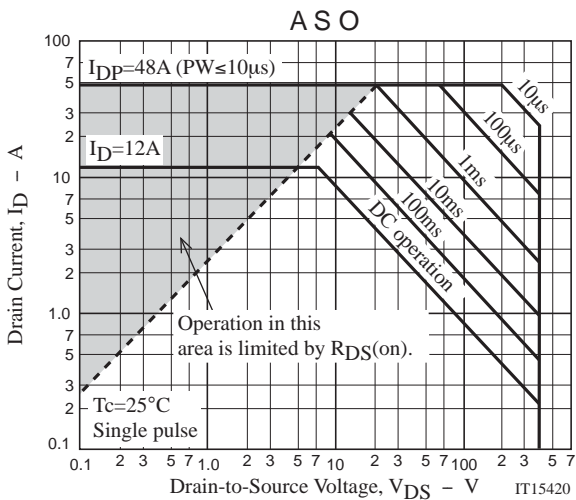
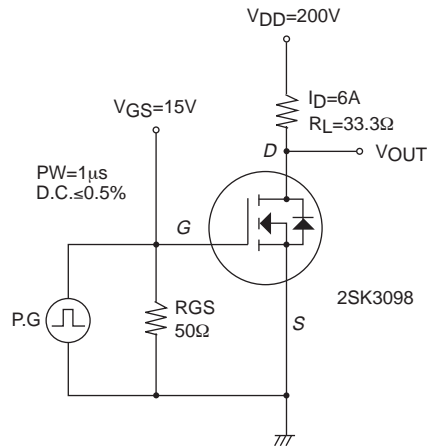
## Package Dimensions

unit : mm (typ)

7507-002



## Switching Time Test Circuit



Note on usage : Since the 2SK3098 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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