

## SOT-723 Plastic-Encapsulate MOSFETS

### 2SK3541 N-Channel MOSFET

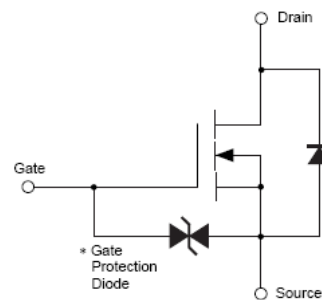
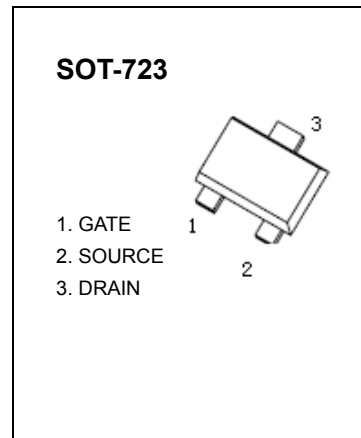
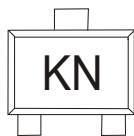
#### FEATURES

- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for portable equipment
- Drive circuits can be simple
- Parallel use is easy

#### APPLICATIONS

Interfacing , Switching

#### MARKING:KN



\*A protection diode is included between the gate and the source terminals to protect the diode against static electricity when the product is in use. Use a protection circuit when the fixed voltages are exceeded.

#### Maximum ratings ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

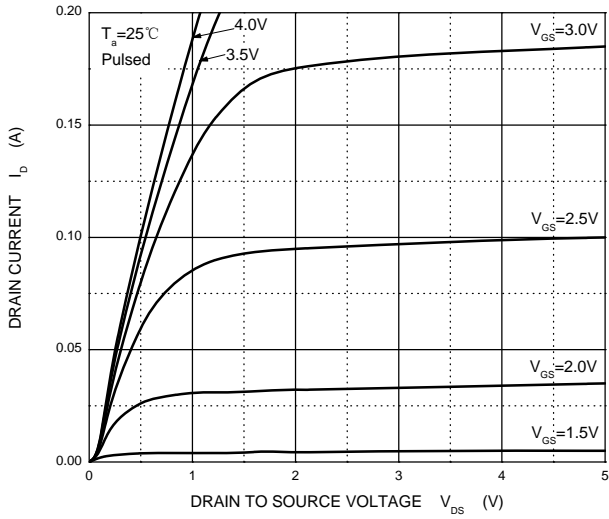
Parameter	Symbol	Value	Units
Drain-source voltage	$V_{DS}$	30	V
Gate-source voltage	$V_{GS}$	$\pm 20$	
Continuous drain current	$I_D$	$\pm 100$	mA
Power dissipation	$P_D$	0.15	W
Thermal resistance from junction to ambient	$R_{\theta JA}$	833	$^{\circ}\text{C}/\text{W}$
Junction temperature	$T_J$	150	$^{\circ}\text{C}$
Storage temperature	$T_{stg}$	-55 ~ +150	

\*  $P_w \leq 10\mu\text{s}$  , Duty cycles  $\leq 1\%$

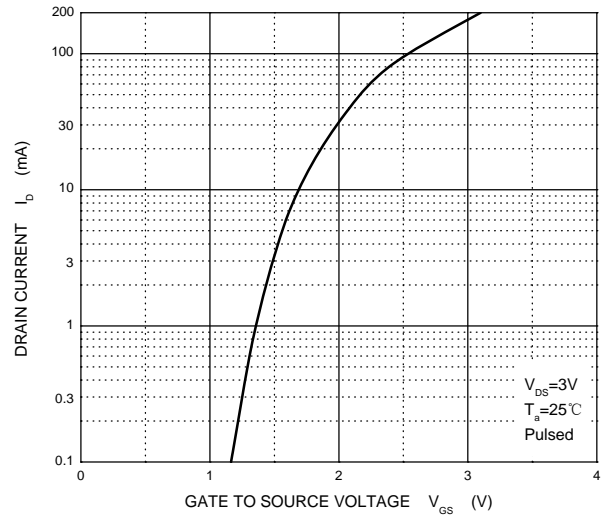
**Electrical characteristics (T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 10μA	30			V
Gate-source leakage current	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V			±2	μA
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V			1.0	μA
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = 3V, I <sub>D</sub> = 100μA	0.8		1.5	V
Static drain-source on-state resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = 4V, I <sub>D</sub> = 10mA		5	8	Ω
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 1mA		7	13	
Forward transconductance	g <sub>FS</sub>	V <sub>DS</sub> = 3V, I <sub>D</sub> = 10mA	20			mS
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 5V, V <sub>GS</sub> = 0V, f = 1MHz		13		pF
Output capacitance	C <sub>oss</sub>			9		
Reverse transfer capacitance	C <sub>rss</sub>			4		
Turn-on delay time	t <sub>d(on)</sub>	V <sub>GS</sub> =5V, V <sub>DD</sub> =5V, I <sub>D</sub> = 10mA R <sub>L</sub> =500Ω, R <sub>G</sub> =10Ω		15		ns
Rise time	t <sub>r</sub>			35		
Turn-off delay time	t <sub>d(off)</sub>			80		
Fall time	t <sub>f</sub>			80		

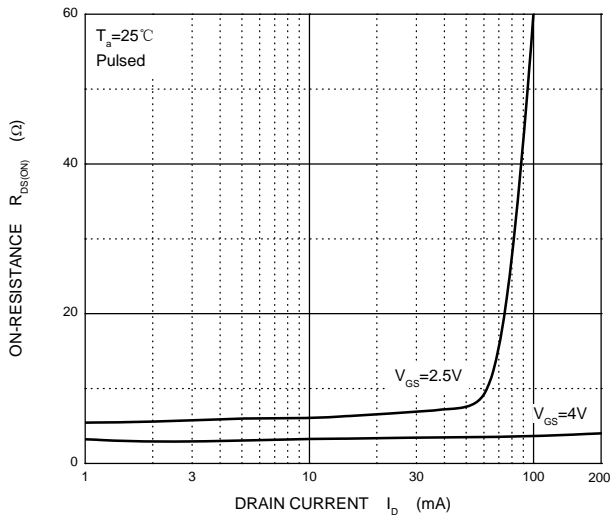
Output Characteristics



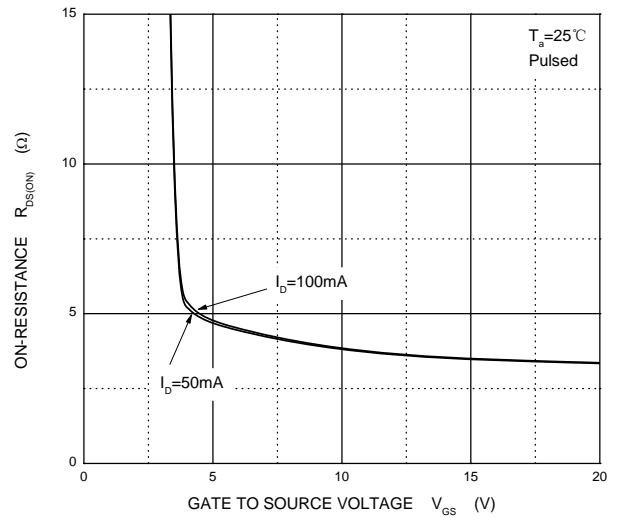
Transfer Characteristics



$R_{DS(ON)}$  —  $I_D$



$R_{DS(ON)}$  —  $V_{GS}$



$I_S$  —  $V_{SD}$

