

# 2SK3662

Switching Regulator, DC-DC Converter, Motor Drive Applications

- Low drain-source ON resistance:  $R_{DS(ON)} = 9.4 \text{ m}\Omega$  (typ.)
- High forward transfer admittance:  $|Y_{fs}| = 55 \text{ S}$  (typ.)
- Low leakage current:  $I_{DSS} = 100 \text{ }\mu\text{A}$  (max) ( $V_{DS} = 60 \text{ V}$ )
- Enhancement-mode:  $V_{th} = 1.3 \text{ to } 2.5 \text{ V}$  ( $V_{DS} = 10 \text{ V}$ ,  $I_D = 1 \text{ mA}$ )

## Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Characteristics		Symbol	Rating	Unit
Drain-source voltage		$V_{DSS}$	60	V
Drain-gate voltage ( $R_{GS} = 20 \text{ k}\Omega$ )		$V_{DGR}$	60	V
Gate-source voltage		$V_{GSS}$	$\pm 20$	V
Drain current	DC (Note 1)	$I_D$	35	A
	Pulse (Note 1)	$I_{DP}$	105	
Drain power dissipation ( $T_c = 25^\circ\text{C}$ )		$P_D$	35	W
Single pulse avalanche energy (Note 2)		$E_{AS}$	204	mJ
Avalanche current		$I_{AR}$	35	A
Repetitive avalanche energy (Note 3)		$E_{AR}$	3.5	mJ
Channel temperature		$T_{ch}$	150	$^\circ\text{C}$
Storage temperature range		$T_{stg}$	-55 to 150	$^\circ\text{C}$

## Thermal Characteristics

Characteristics	Symbol	Max	Unit
Thermal resistance, channel to case	$R_{th(ch-c)}$	3.57	$^\circ\text{C}/\text{W}$
Thermal resistance, channel to ambient	$R_{th(ch-a)}$	62.5	$^\circ\text{C}/\text{W}$

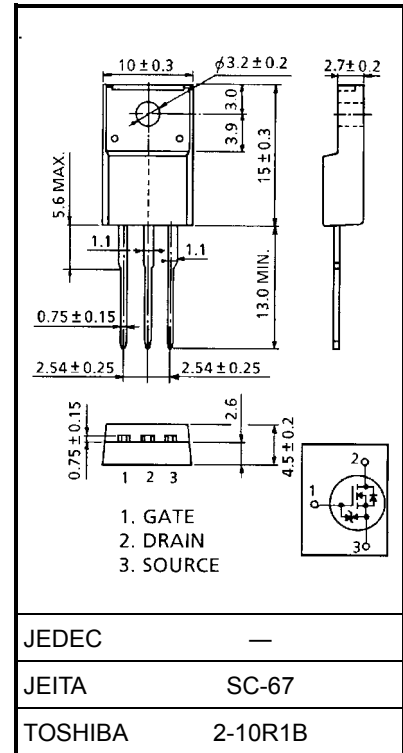
Note 1: Please use devices on condition that the channel temperature is below  $150^\circ\text{C}$ .

Note 2:  $V_{DD} = 25 \text{ V}$ ,  $T_{ch} = 25^\circ\text{C}$  (initial),  $L = 227 \text{ }\mu\text{H}$ ,  $I_{AR} = 35 \text{ A}$ ,  $R_G = 25 \text{ }\Omega$

Note 3: Repetitive rating: pulse width limited by maximum channel temperature

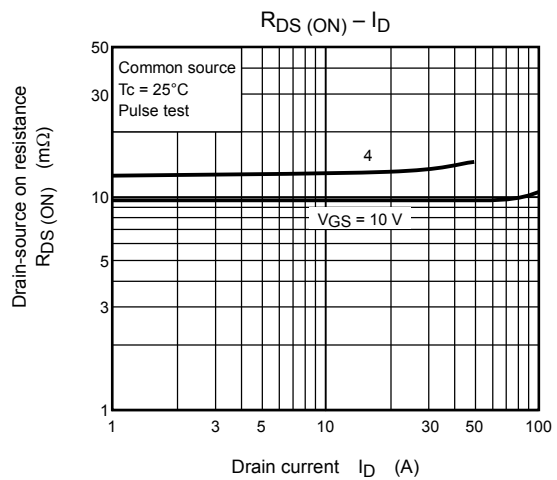
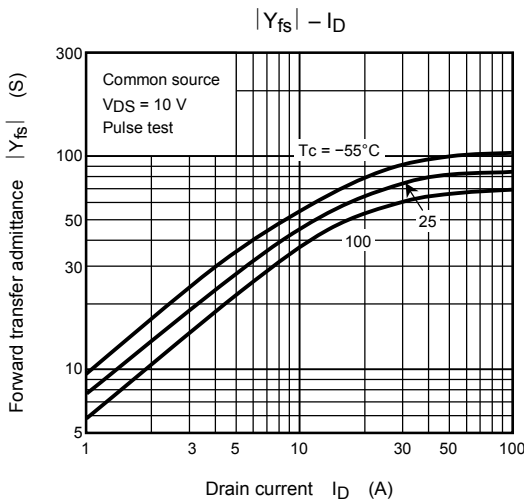
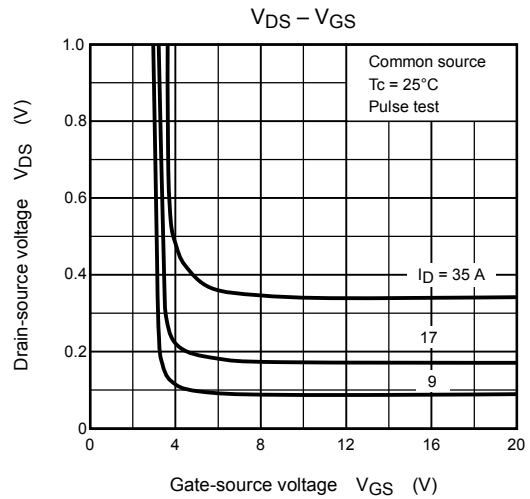
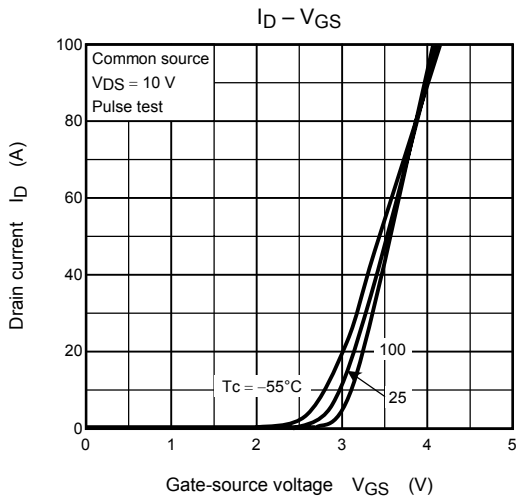
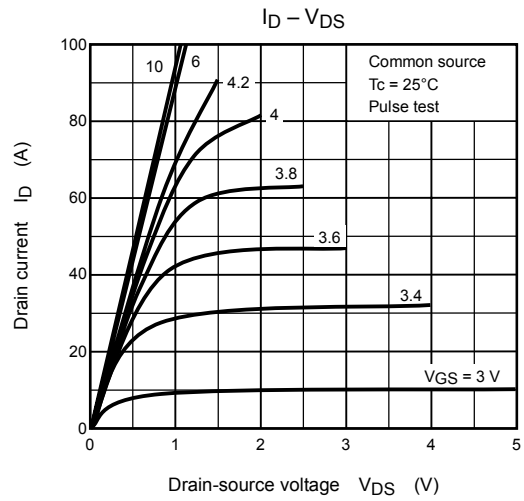
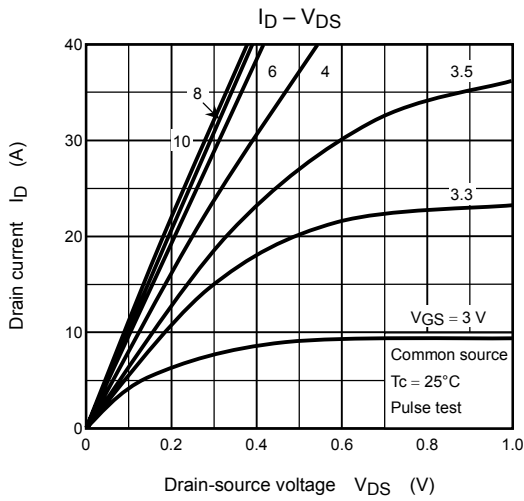
This transistor is an electrostatic sensitive device. Please handle with caution.

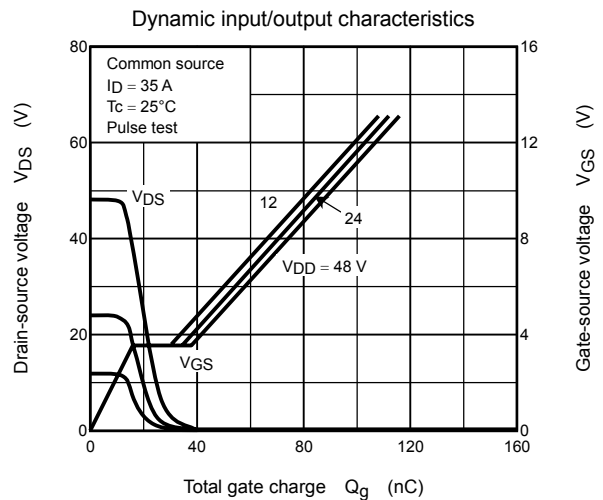
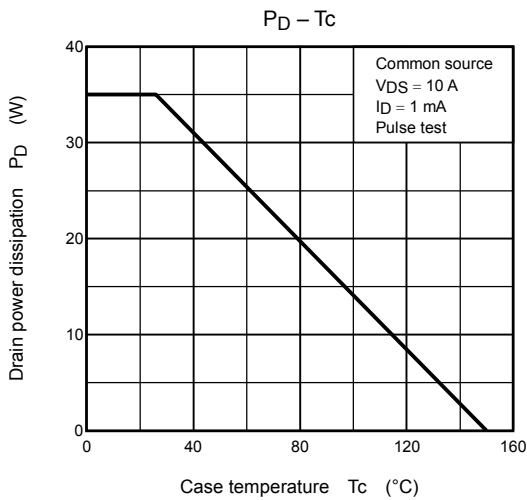
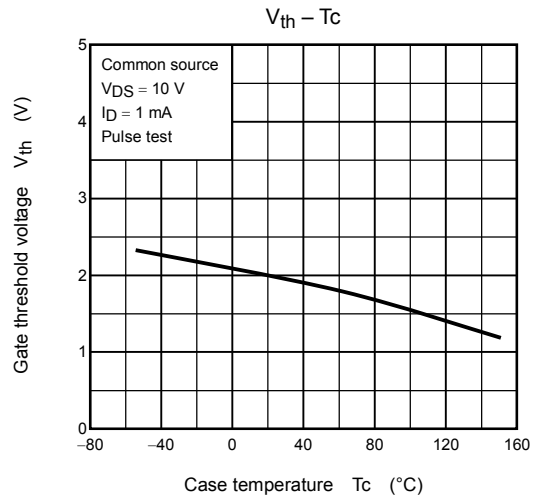
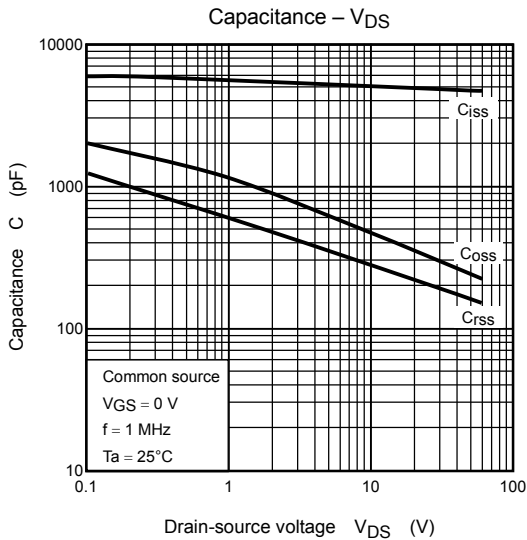
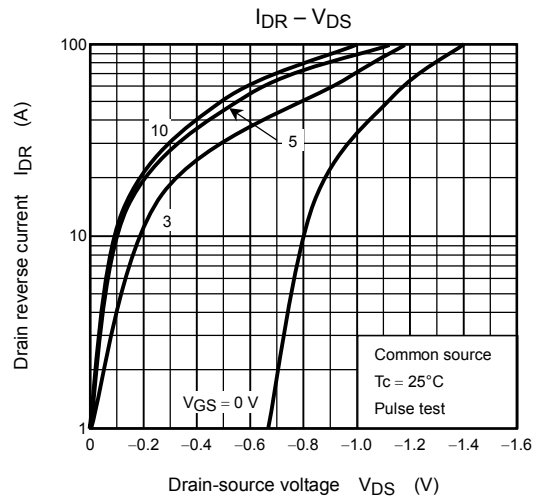
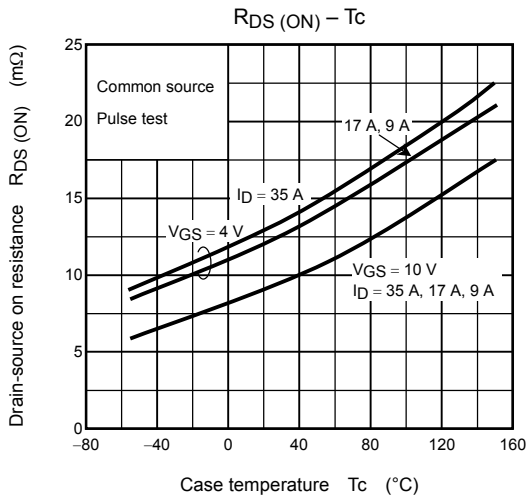
Unit: mm

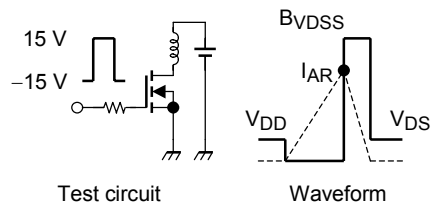
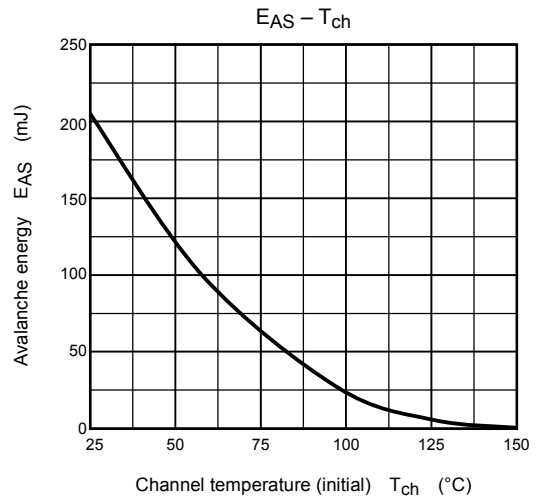
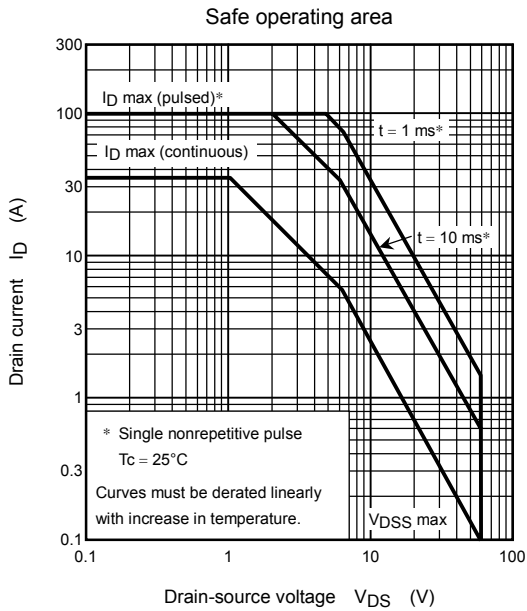
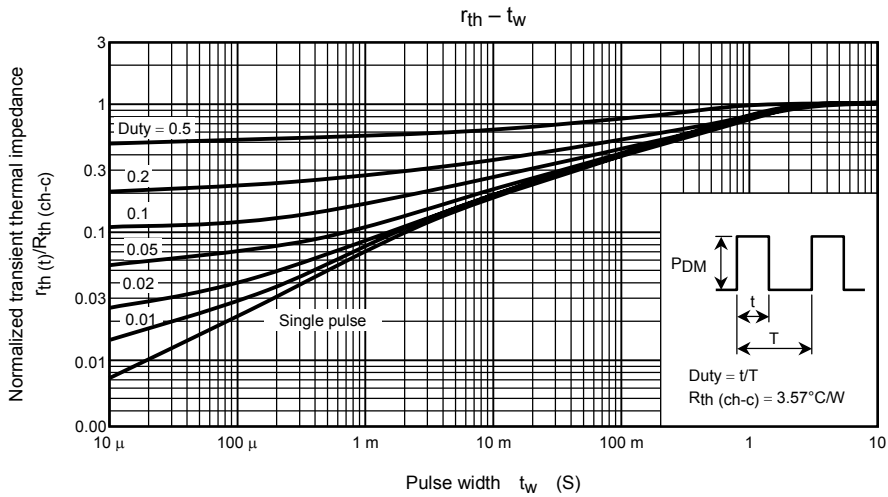


Weight: 1.9 g (typ.)









$$R_G = 25 \Omega$$

$$V_{DD} = 25 \text{ V}, L = 227 \mu\text{H}$$

$$E_{AS} = \frac{1}{2} \cdot L \cdot I_{AR}^2 \cdot \left( \frac{BVDSS}{BVDSS - V_{DD}} \right)$$

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