

این دیتاشیت توسط توکل الکترونیک تهیه و ارائه شده است.
جهت مشاهده قیمت، موجودی و ثبت سفارش این قطعه به وبسایت توکل الکترونیک مراجعه فرمایید.



مشاهده قیمت و خرید

برای خرید و مشاهده سایر محصولات کلیک کنید



TOSHIBA

2SK2961

TOSHIBA Field Effect Transistor Silicon N Channel MOS Type (L^2 - π -MOSV)

2SK2961

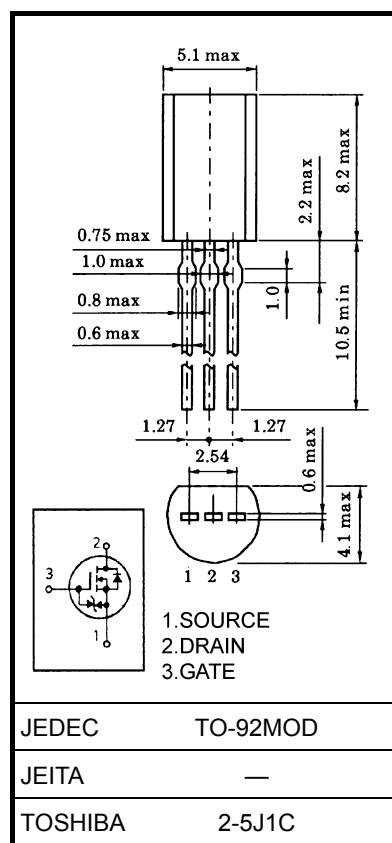
Relay Drive, Motor Drive and DC-DC Converter
Application

Unit: mm

- Low drain-source ON resistance : $R_{DS(ON)} = 0.2 \Omega$ (typ.)
- High forward transfer admittance : $|Y_{fs}| = 2.0 S$ (typ.)
- Low leakage current : $I_{DSS} = 100 \mu A$ ($V_{DS} = 60 V$)
- Enhancement mode : $V_{th} = 0.8 \sim 2.0 V$ ($V_{DS} = 10 V$, $I_D = 1 mA$)

Absolute Maximum Ratings ($T_a = 25^\circ C$)

Characteristics	Symbol	Rating	Unit
Drain-source voltage	V_{DSS}	60	V
Drain-gate voltage ($R_{GS} = 20 k\Omega$)	V_{DGR}	60	V
Gate-source voltage	V_{GSS}	± 20	V
Drain current	DC (Note 1)	I_D	A
	Pulse (Note 1)	I_{DP}	
Drain power dissipation	P_D	0.9	W
Channel temperature	T_{ch}	150	$^\circ C$
Storage temperature range	T_{stg}	$-55 \sim 150$	$^\circ C$



Weight: 0.36 g (typ.)

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings. Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc.).

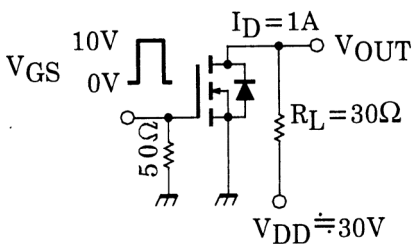
Thermal Characteristics

Characteristics	Symbol	Max	Unit
Thermal resistance, channel to ambient	$R_{th(ch-a)}$	138	$^\circ C / W$

Note 1: Ensure that the channel temperature does not exceed $150^\circ C$.

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

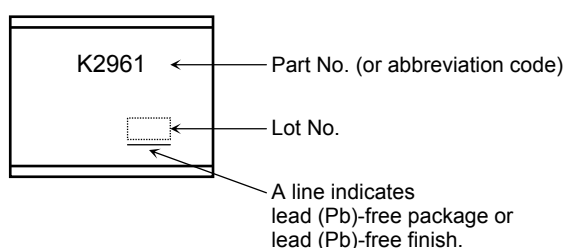
Electrical Characteristics (Ta = 25°C)

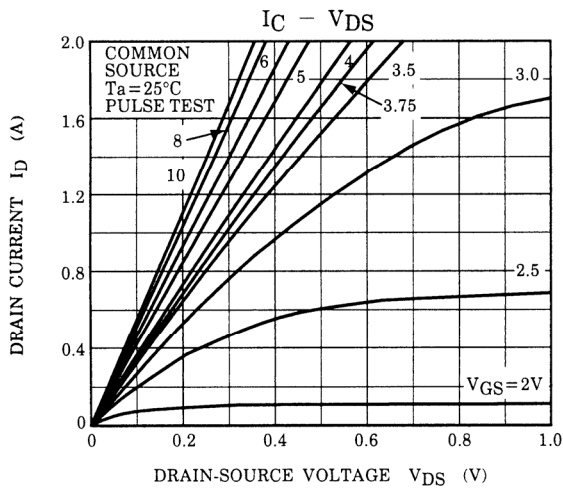
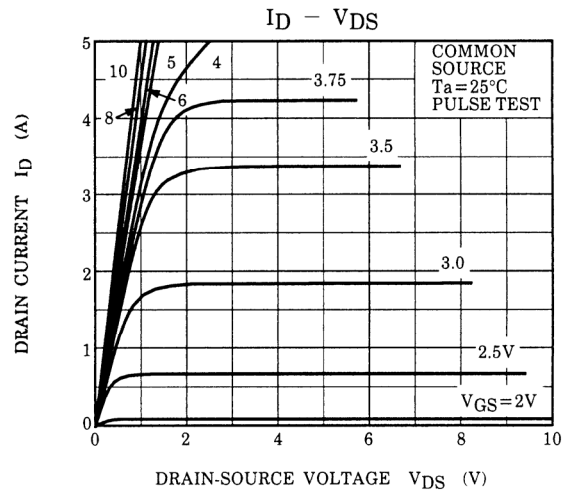
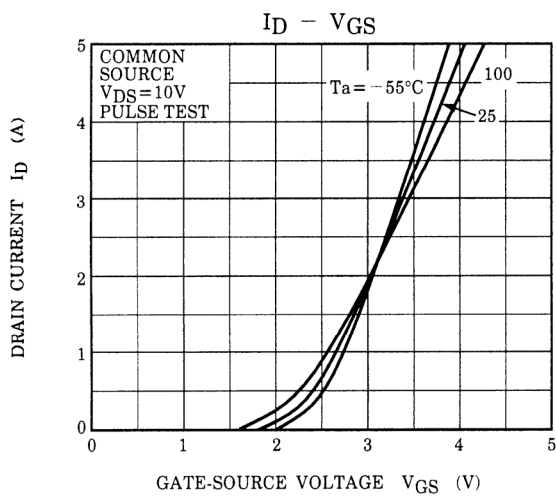
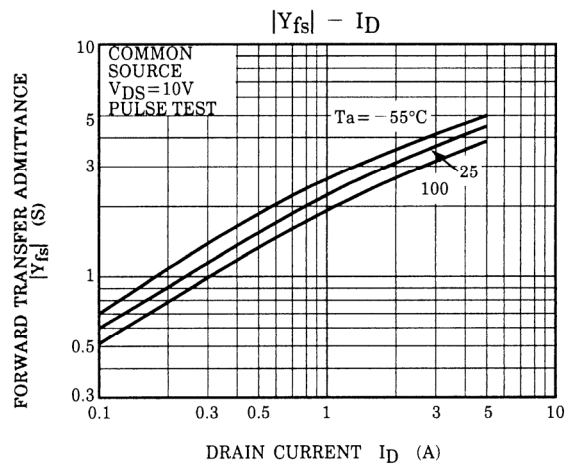
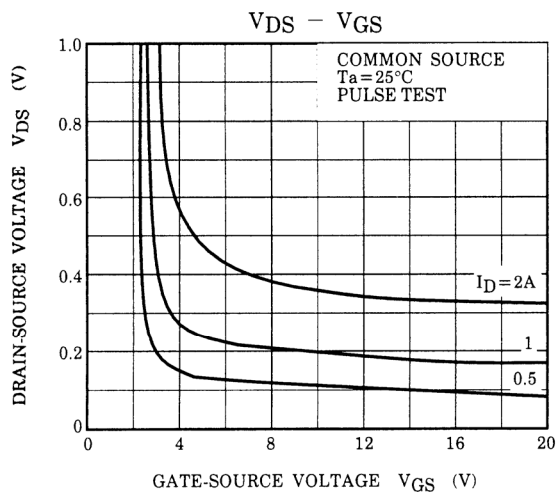
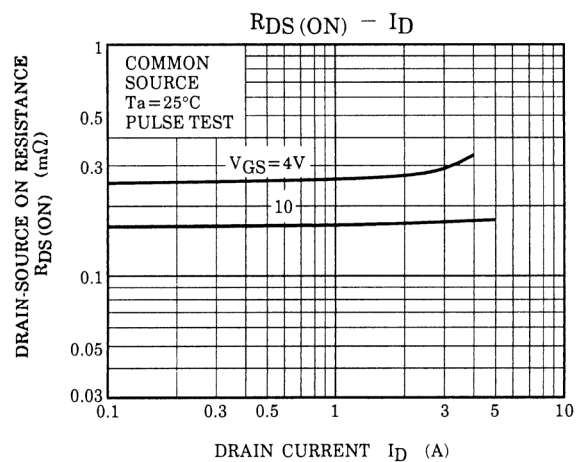
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current		I_{GSS}	$V_{GS} = \pm 16 \text{ V}, V_{DS} = 0 \text{ V}$	—	—	± 10	μA
Drain cut-off current		I_{DSS}	$V_{DS} = 60 \text{ V}, V_{GS} = 0 \text{ V}$	—	—	100	μA
Drain-source breakdown voltage		$V_{(BR)DSS}$	$I_D = 10 \text{ mA}, V_{GS} = 0 \text{ V}$	60	—	—	V
Gate threshold voltage		V_{th}	$V_{DS} = 10 \text{ V}, I_D = 1 \text{ mA}$	0.8	—	2.0	V
Drain-source ON resistance		$R_{DS(ON)}$	$V_{GS} = 4 \text{ V}, I_D = 1.0 \text{ A}$	—	0.26	0.38	Ω
			$V_{GS} = 10 \text{ V}, I_D = 1.0 \text{ A}$	—	0.20	0.27	
Forward transfer admittance		$ Y_{fs} $	$V_{DS} = 10 \text{ V}, I_D = 1.0 \text{ A}$	1.0	2.0	—	S
Input capacitance		C_{iss}	$V_{DS} = 10 \text{ V}, V_{GS} = 0 \text{ V}, f = 1 \text{ MHz}$	—	170	—	pF
Reverse transfer capacitance		C_{rss}		—	25	—	
Output capacitance		C_{oss}		—	75	—	
Switching time	Rise time	t_r	 <p>$I_D = 1 \text{ A}$ $V_{GS} = 10 \text{ V}$ 0 V 50Ω $R_L = 30 \Omega$ $V_{DD} = 30 \text{ V}$ Duty $\leq 1\%$, $t_w = 10 \mu\text{s}$</p>	—	10	—	ns
	Turn-on time	t_{on}		—	15	—	
	Fall time	t_f		—	50	—	
	Turn-off time	t_{off}		—	170	—	
Total gate charge (gate-source plus gate-drain)		Q_g	$V_{DD} \approx 48 \text{ V}, V_{GS} = 10 \text{ V}, I_D = 2 \text{ A}$	—	5.8	—	nC
Gate-source charge		Q_{gs}		—	4.1	—	
Gate-drain ("miller") Charge		Q_{gd}		—	1.7	—	

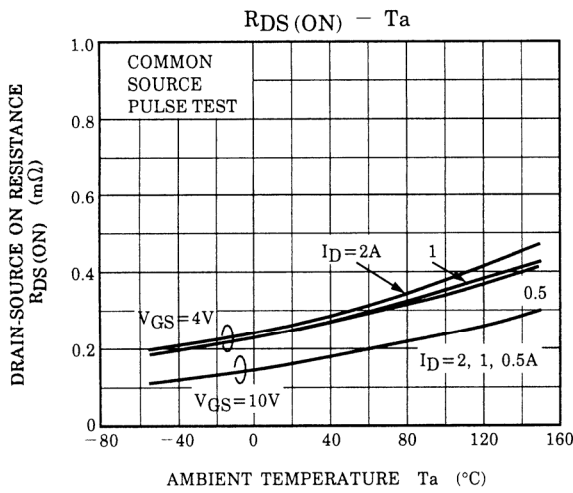
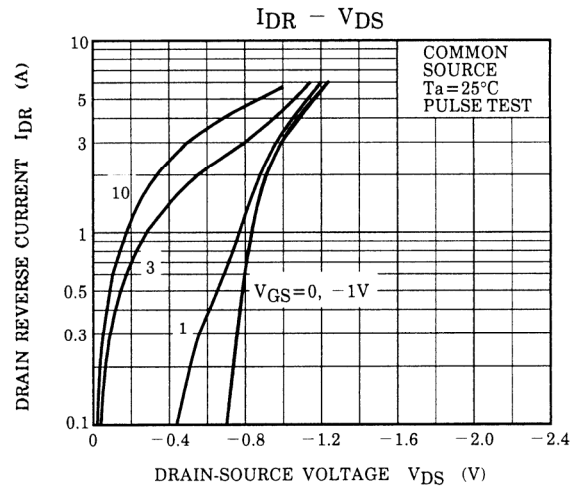
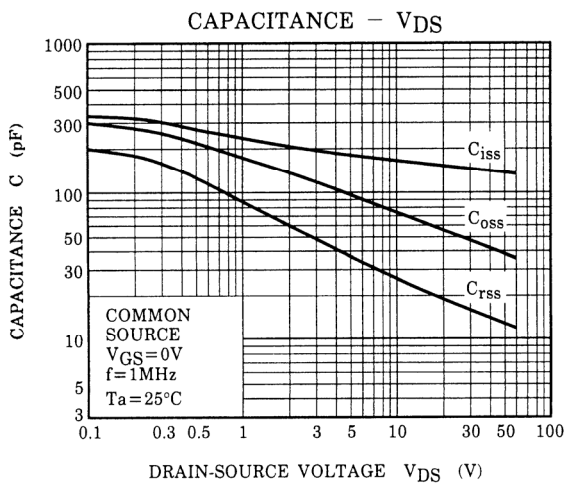
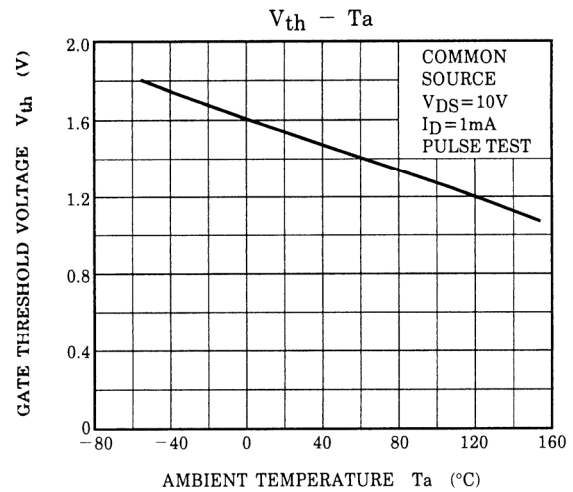
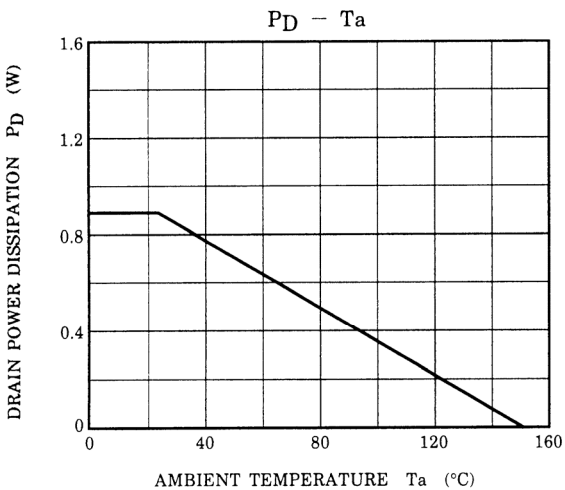
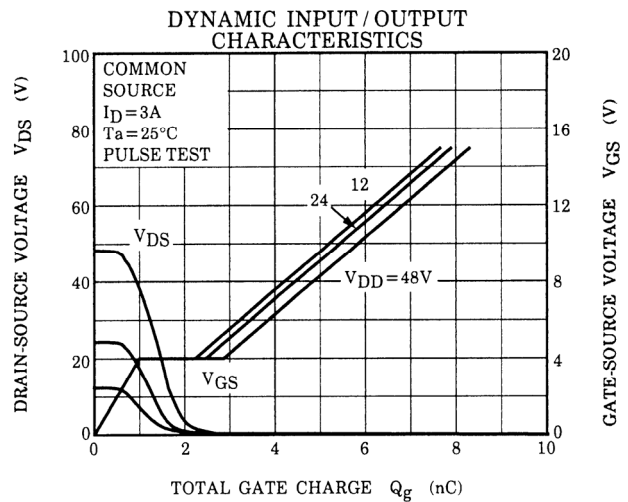
Source-Drain Ratings and Characteristics (Ta = 25°C)

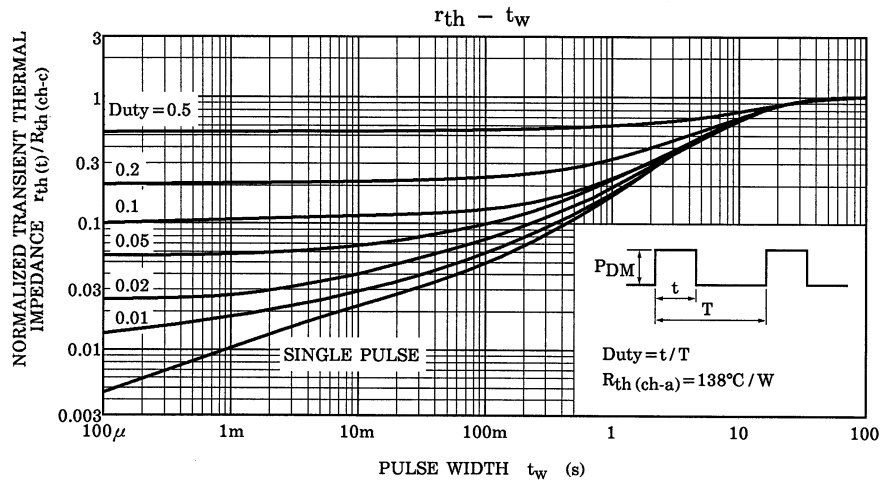
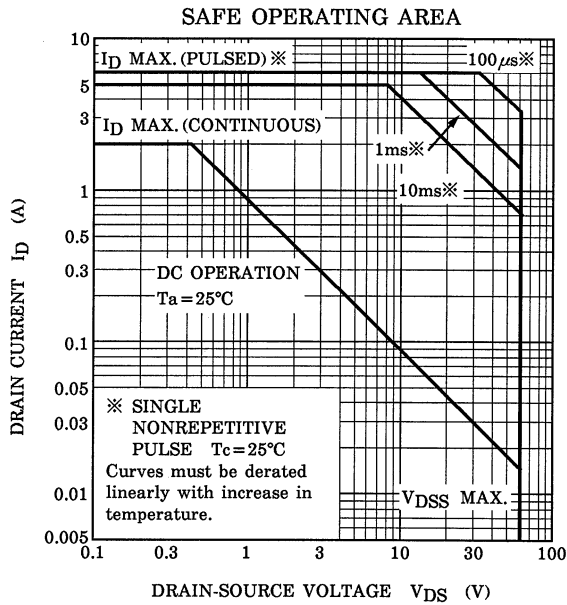
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Continuous drain reverse current (Note 1)	I_{DR}	—	—	—	2.0	A
Pulse drain reverse current (Note 1)	I_{DRP}	—	—	—	6.0	A
Forward voltage (diode)	V_{DSF}	$I_{DR} = 2 \text{ A}, V_{GS} = 0 \text{ V}$	—	—	−1.5	V
Reverse recovery time	t_{rr}	$I_{DR} = 2 \text{ A}, V_{GS} = 0 \text{ V}, dI_{DR} / dt = 50 \text{ A} / \mu\text{s}$	—	45	—	ns
Reverse recovery charge	Q_{rr}		—	40.5	—	nC

Marking









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20070701-EN

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