Interface and switching (30V, 200mA)
2SK2731
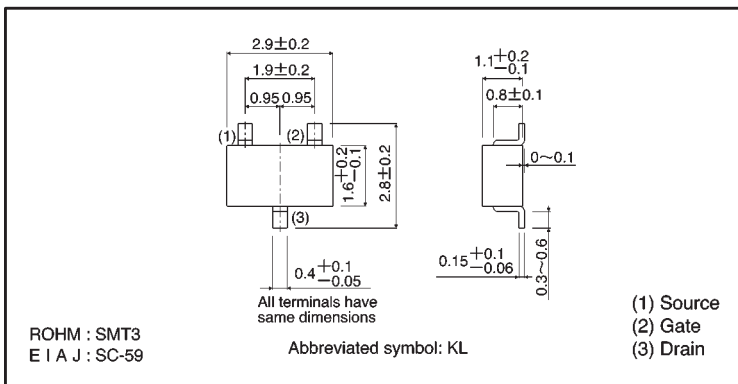
●Features
1) Low on-resistance.
2) Fast switching speed.
3) Low-voltage drive (4V).
4) Easily designed drive circuits.
5) Easy to parallel.

●Structure
Silicon N-channel
MOSFET

●External dimensions (Units: mm)

ROHM : SMT3
E I A J : SC-59

All terminals have same dimensions

Abbreviated symbol: KL

(1) Source
(2) Gate
(3) Drain

●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Drain-source voltage		V_{DSS}	30	V
Gate-source voltage		V_{GSS}	±20	V
Drain current	Continuous	I_D	200	mA
	Pulsed	I_{DP}*	800	mA
Reverse drain current	Continuous	I_{DR}	200	mA
	Pulsed	I_{DRP}*	800	mA
Total power dissipation		P_D	200	mW
Channel temperature		Tch	150	°C
Storage temperature		Tstg	−55～+150	°C

＊ Pw≦10 μs, Duty cycle≦1％

●Equivalent circuit

Drain

Gate

* Gate Protection Diode
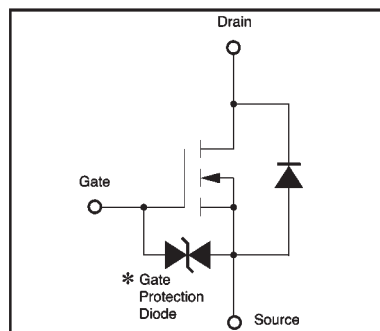
Source

＊ 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 voltage are exceeded.

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Gate-source leakage	I_{GSS}	—	—	±10	μA	V_{GS}=±20V, V_{DS}=0V
Drain-source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	I_D=1mA, V_{GS}=0V
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	V_{DS}=30V, V_{GS}=0V
Gate threshold voltage	$V_{GS(th)}$	1.0	—	2.5	V	V_{DS}=10V, I_D=1mA
Static drain-source on-state resistance	$R_{DS(on)}$	—	1.5	2.8	Ω	I_D=0.1A, V_{GS}=10V
		—	2.8	4.5		I_D=0.1A, V_{GS}=4V
Forward transfer admittance	$\mid Y_{fs} \mid^*$	100	—	—	mS	I_D=0.1A, V_{DS}=10V
Input capacitance	C_{iss}	—	25	—	pF	V_{DS}=10V
Output capacitance	C_{oss}	—	15	—	pF	V_{GS}=0V
Reverse transfer capacitance	C_{rss}	—	10	—	pF	f=1MHz
Turn-on delay time	$t_{d(on)}$	—	15	—	ns	I_D=0.1A, V_{DD}≒15V
Rise time	t_r	—	20	—	ns	V_{GS}=10V
Turn-off delay time	$t_{d(off)}$	—	90	—	ns	R_L=150Ω
Fall time	t_f	—	100	—	ns	R_G=10Ω

∗ Pw≦300μs, Duty cycle≦1%

●Packaging specifications

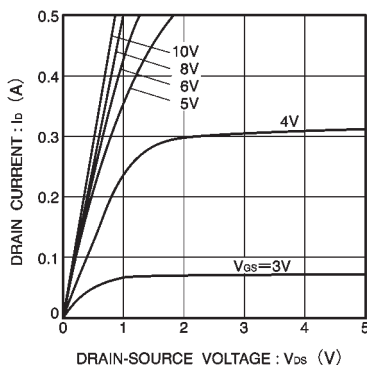| Type	Package		Taping
	Code		T146
	Basic ordering unit (pieces)		3000
2SK2731			○

●Electrical characteristic curves

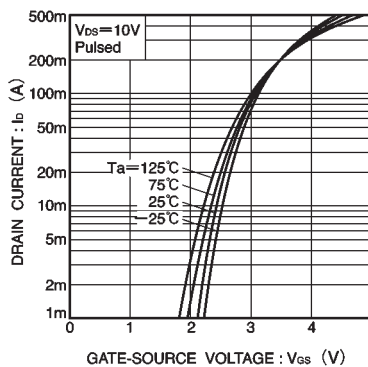Fig.1 Typical output characteristics
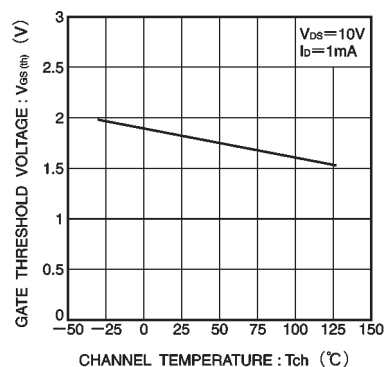

Fig.2 Typical transfer characteristics

Fig.3 Gate threshold voltage vs. channel temperature
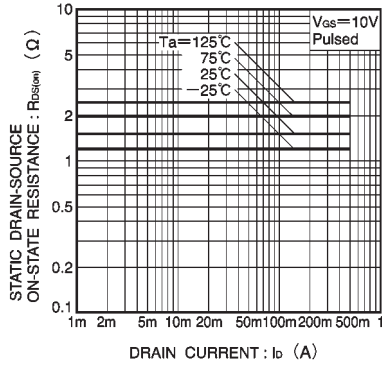
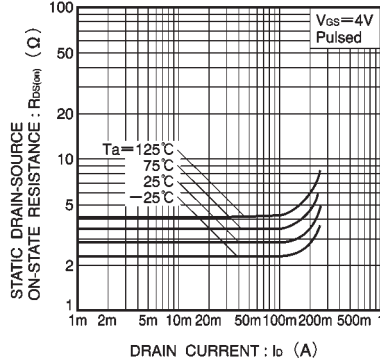Fig.4   Static drain-source on-state resistance vs. drain current（Ⅰ）

Fig.5   Static drain-source on-state resistance vs. drain current（Ⅱ）
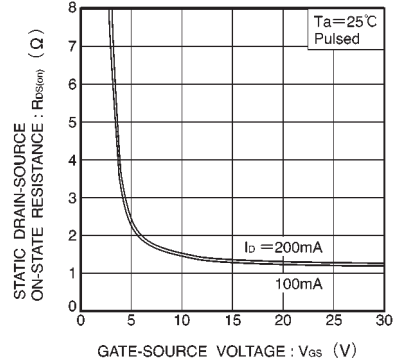

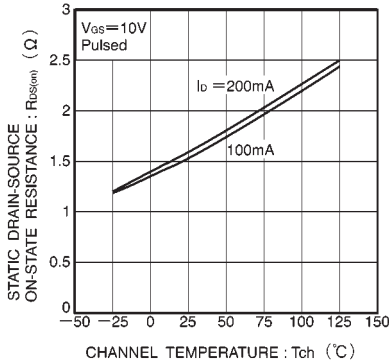Fig.6   Static drain-source on-state resistance vs. gate-source voltage

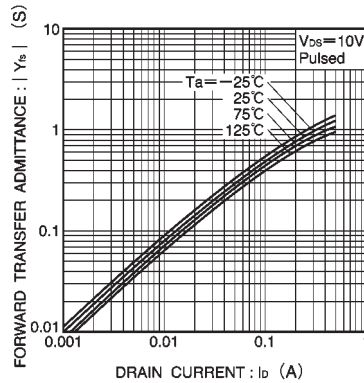Fig.7   Static drain-source on-state resistance vs. channel temperature

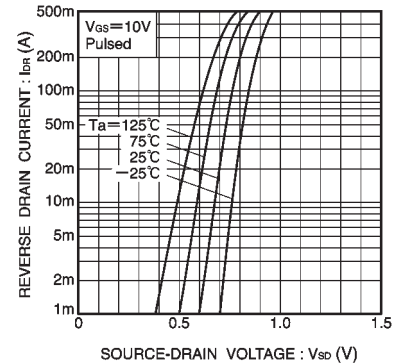Fig.8   Forward transfer admittance vs. drain current

Fig.9   Reverse drain current vs. source-drain voltage（Ⅰ）
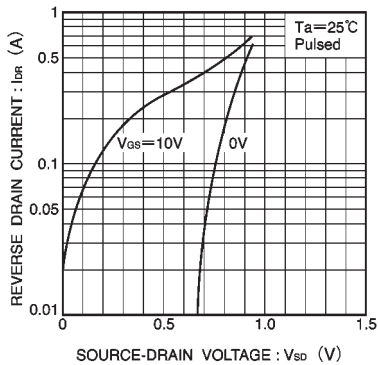

Fig.10   Reverse drain current vs. source-drain voltage（Ⅱ）
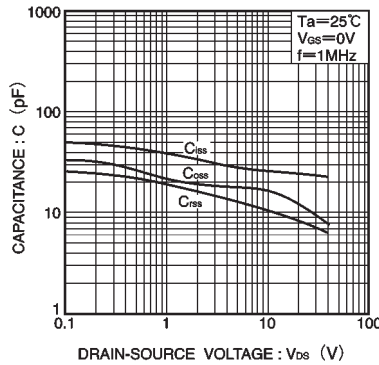

Fig.11   Typical capacitance vs. drain-source voltage
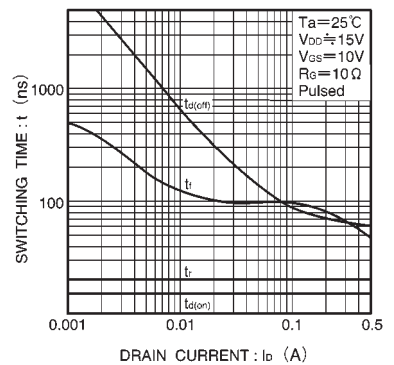

Fig.12   Switching characteristics（See Figures 13 and 14 for the measurement circuit and resultant waveforms）

ROHM

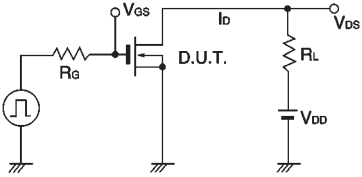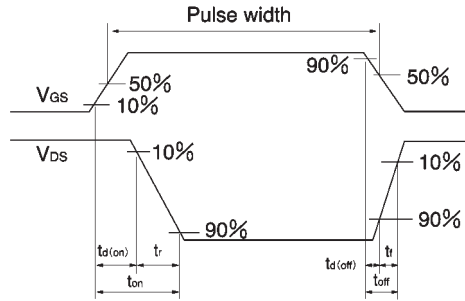●Switching characteristics measurement circuit

Fig.13 Switching time measurement circuit

Fig.14 Switching time waveforms