# Transistors

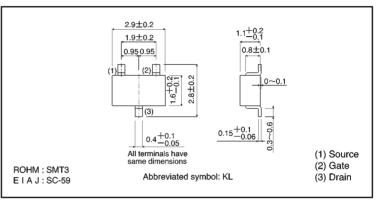
# Interface and switching (30V, 200mA) 25K2731

### 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
 MOSEET

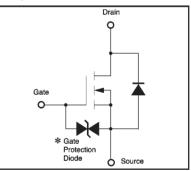
External dimensions (Units: mm)



### •Absolute maximum ratings (Ta = $25^{\circ}$ C)

Parameter		Symbol	Limits	Unit				
Drain-source voltage		VDSS	30	V				
Gate-source voltage		Vgss	±20	V				
Ducia	Continuous	lo	200	mA				
Drain current	Pulsed	ldp*	800	mA				
Reverse drain	Continuous	IDR	200	mA				
current	Pulsed	Idrp*	800	mA				
Total power diss	ipation	Po	200	mW				
Channel temperation	Channel temperature		150	C				
Storage tempera	e temperature Tstg -55~+		-55~+150	C				

Equivalent circuit



\* 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.

\*  $Pw \leq 10 \mu s$ , Duty cycle  $\leq 1\%$ 

## •Electrical characteristics (Ta = $25^{\circ}$ C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Test Conditions
Gate-source leakage	lass	_	_	±10	μA	$V_{GS}=\pm 20V, V_{DS}=0V$
Drain-source breakdown voltage		30	_	-	V	ID=1mA, VGS=0V
Zero gate voltage drain current	IDSS	-	_	10	μA	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V
Gate threshold voltage	VGS (th)	1.0	_	2.5	V	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA
Static drain-source on-state	<b>D</b>	_	1.5	2.8	Ω	ID=0.1A, VGS=10V
resistance	RDS (on)	_	2.8	4.5		ID=0.1A, VGS=4V
Forward transfer admittance	Y <sub>fs</sub>  *	100	_	-	mS	ID=0.1A, VDS=10V
Input capacitance	Ciss	_	25	—	pF	V <sub>DS</sub> =10V
Output capacitance	Coss	—	15	—	pF	V <sub>GS</sub> =0V
Reverse transfer capacitance	Crss	—	10	—	pF	f=1MHz
Turn-on delay time	td (on)	_	15	—	ns	lo=0.1A, Voo≑15V
Rise time	tr	_	20	_	ns	V <sub>Gs</sub> =10V
Turn-off delay time	td (off)	_	90	_	ns	R∟=150Ω
Fall time	tr	_	100	-	ns	$R_G=10\Omega$

\* Pw≦300 μs, Duty cycle≦1%

Packaging specifications

	Package	Taping
Туре	Code	T146
	Basic ordering unit (pieces)	3000
2SK2731		0

### •Electrical characteristic curves

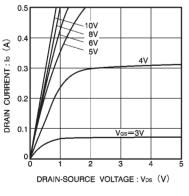


Fig.1 Typical output characteristics

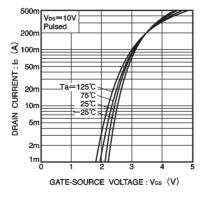
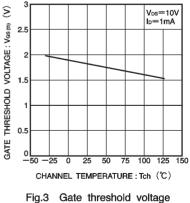
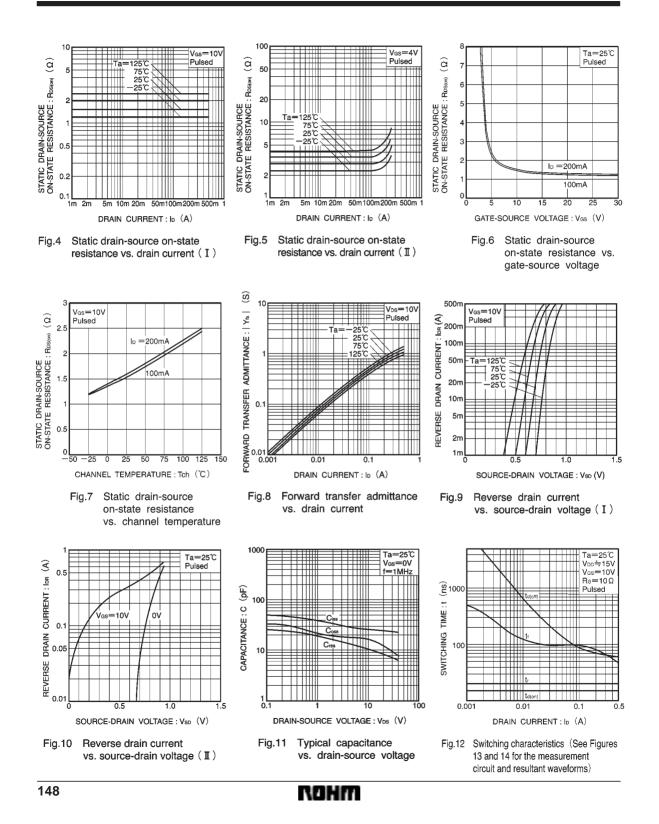


Fig.2 Typical transfer characteristics

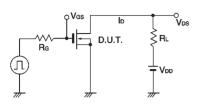


vs. channel temperature

# Transistors



Switching characteristics measurement circuit



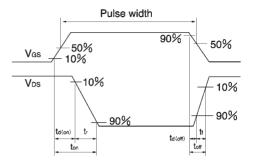


Fig.13 Switching time measurement circuit

Fig.14 Switching time waveforms



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