Switching (500V, 5A)
2SK2793
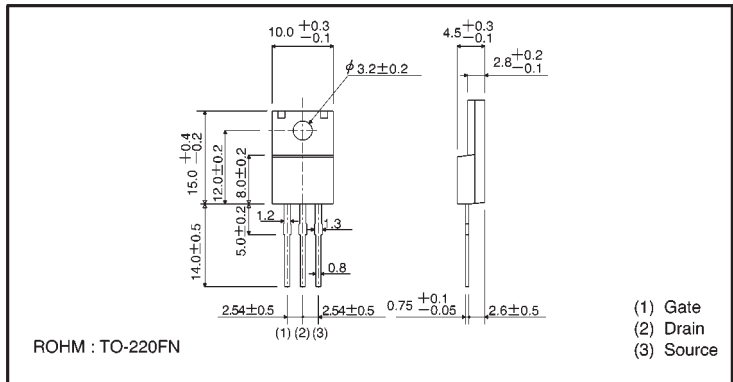
●Features
1) Low on-resistance.
2) Fast switching speed.
3) Wide SOA (safe operating area).
4) Gate-source voltage (V_{GSS}) guaranteed to be ±30V.
5) Easily designed drive circuits.
6) Easy to parallel.

●Structure
Silicon N-channel
MOSFET

●External dimensions (Units: mm)

ROHM : TO-220FN

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

●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Drain-source voltage		V_{DSS}	500	V
Gate-source voltage		V_{GSS}	±30	V
Drain current	Continuous	I_D	5	A
	Pulsed	I_{DP}*	20	A
Reverse drain current	Continuous	I_{DR}	5	A
	Pulsed	I_{DRP}*	20	A
Total power dissipation (Tc=25°C)		P_D	30	W
Channel temperature		Tch	150	°C
Storage temperature		Tstg	−55～+150	°C

＊ Pw≦10μs, Duty cycle≦1%

●Packaging specifications

Type	Package	Bulk
	Package	Bulk
	Code	—
	Basic ordering unit (pieces)	500
2SK2793		○

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●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Gate-source leakage	I_{GSS}	—	—	$\pm$100	nA	$V_{GS}=\pm$30V, $V_{DS}=$0V
Drain-source breakdown voltage	$V_{(BR)DSS}$	500	—	—	V	$I_D=$1mA, $V_{GS}=$0V
Zero gate voltage drain current	I_{DSS}	—	—	100	μA	$V_{DS}=$500V, $V_{GS}=$0V
Gate threshold voltage	$V_{GS(th)}$	2.0	—	4.0	V	$V_{DS}=$10V, $I_D=$1mA
Static drain-source on-state resistance	$R_{DS(on)}$	—	1.1	1.5	Ω	$I_D=$2.5A, $V_{GS}=$10V
Forward transfer admittance	$\mid Y_{fs}\mid$	1.0	3.0	—	S	$I_D=$2.5A, $V_{DS}=$10V
Input capacitance	C_{iss}	—	600	—	pF	$V_{DS}=$10V
Output capacitance	C_{oss}	—	135	—	pF	$V_{GS}=$0V
Reverse transfer capacitance	C_{rss}	—	52	—	pF	f=1MHz
Turn-on delay time	$t_{d(on)}$	—	14	—	ns	$I_D=$2.5A, $V_{DD}\fallingdotseq$150V
Rise time	t_r	—	15	—	ns	$V_{GS}=$10V
Turn-off delay time	$t_{d(off)}$	—	48	—	ns	$R_L=$60Ω
Fall time	t_f	—	30	—	ns	$R_G=$10Ω
Reverse recovery time	t_{rr}	—	420	—	ns	$I_{DR}=$5A, $V_{GS}=$0V
Reverse recovery charge	Q_{rr}	—	2.6	—	μC	di/dt=100A/μs

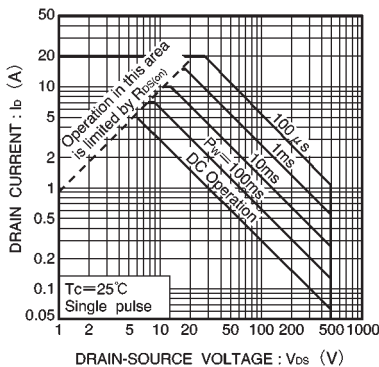●Electrical characteristic curves

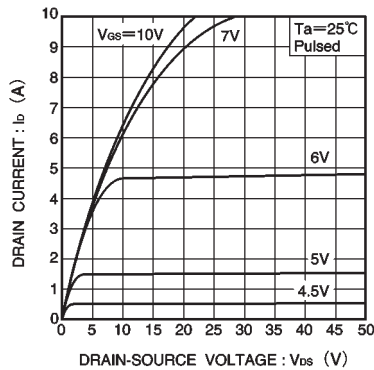Fig.1 Maximum safe operating area
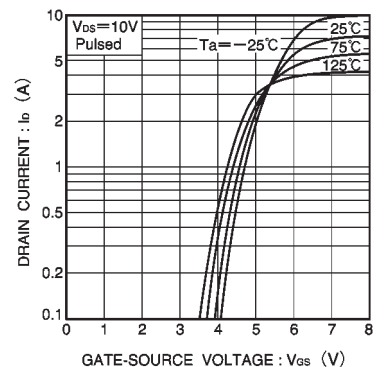

Fig.2 Typical output characteristics

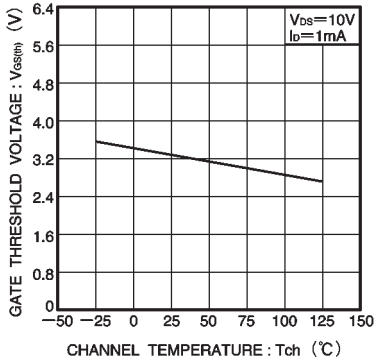Fig.3 Typical transfer characteristics

Fig.4   Gate threshold voltage
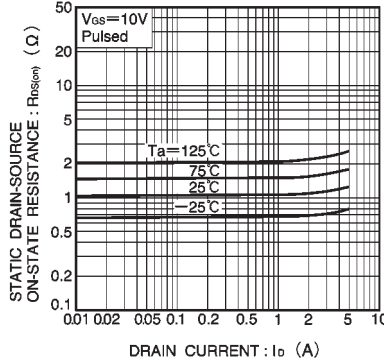vs. channel temperature

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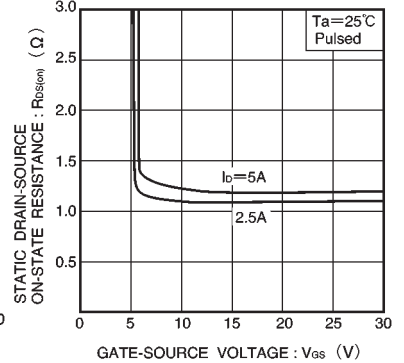on-state resistance
vs. drain current

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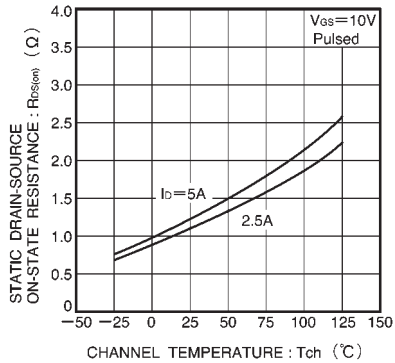gate-source voltage

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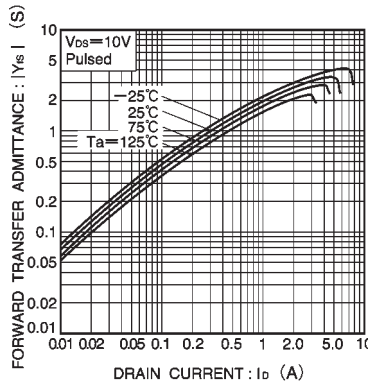on-state resistance vs.
channel temperature

Fig.8   Forward transfer admittance
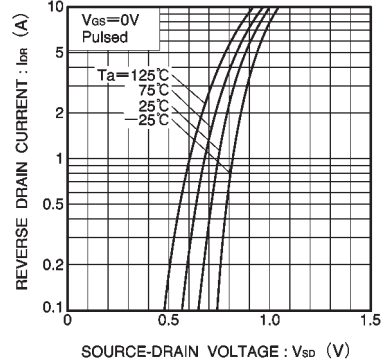vs. drain current
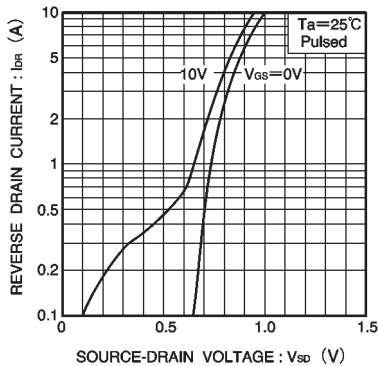

Fig.9   Reverse drain current vs.
source-drain voltage（Ⅰ）
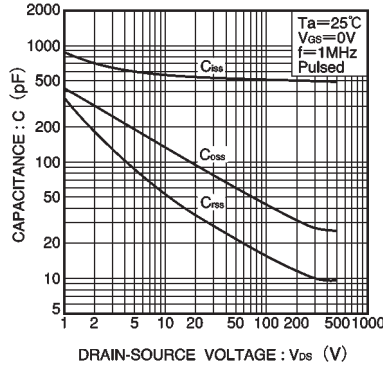

Fig.10   Reverse drain current vs.
source-drain voltage（Ⅱ）

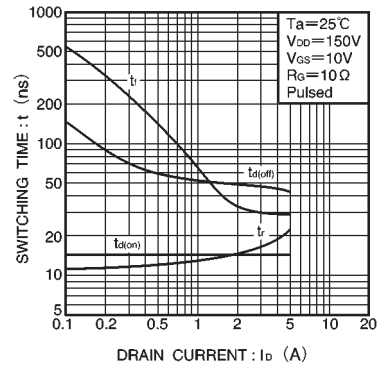Fig.11   Typical capacitance
vs. drain-source voltage

Fig.12   Switching characteristics（See Figures
16 and 17 for the measurement circuit
and resultant waveforms）
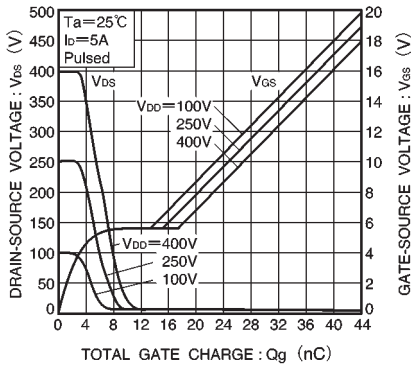
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Fig.13 Dynamic input characteristics
        (See Figure 18 for
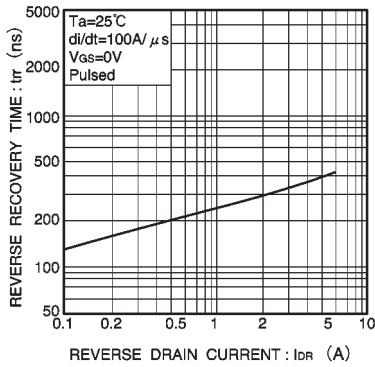   measurement circuit)

Fig.14 Reverse recovery time
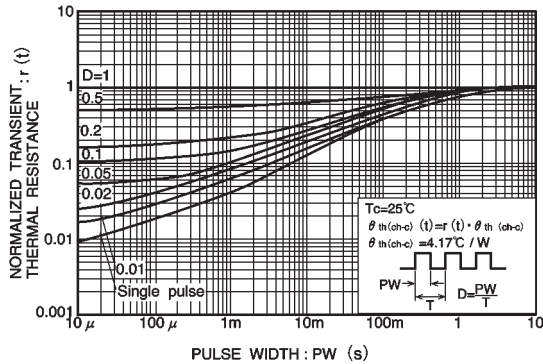   vs. reverse drain current

Fig.15 Normalized transient thermal
        resistance vs. pulse width

●Switching characteristics
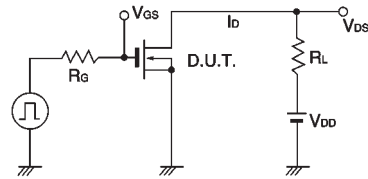 measurement circuit

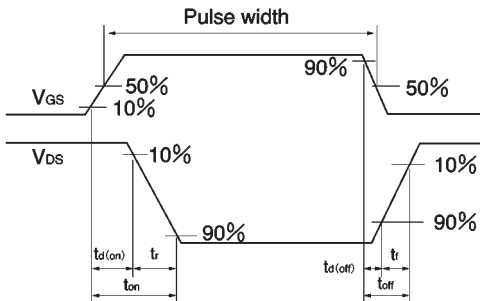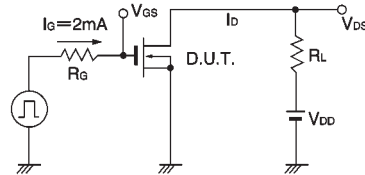Fig.16 Switching time measurement circuit

Fig.17 Switching time waveforms

Fig.18 Gate charge measurement circuit