

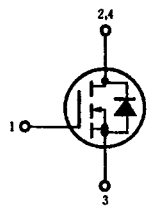
# 2SK535(L), 2SK535(S)

## SILICON N-CHANNEL MOS FET

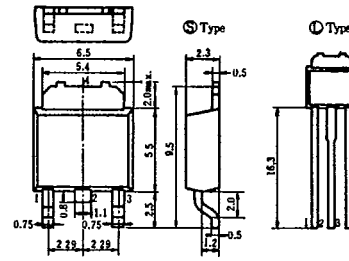
### HIGH SPEED POWER SWITCHING

#### ■ FEATURES

- High Speed Switching.
- High Cutoff Frequency.
- No Secondary Breakdown.
- Suitable for Switching Regulator and Ultrasonic Power Oscillators.



1. Gate  
2., 4. Drain  
3. Source  
(Dimensions in mm)



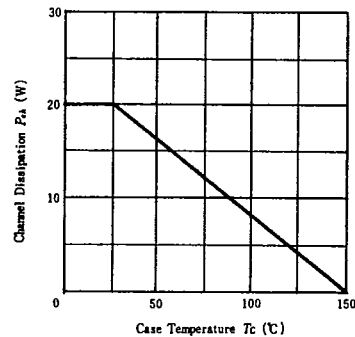
(DPAK)

#### ■ ABSOLUTE MAXIMUM RATINGS ( $T_c=25^\circ\text{C}$ )

Item	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	400	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current	$I_D$	1.5	A
Drain Peak Current	$I_{D(peak)}$	3.0	A
Body-Drain Diode Reverse Drain Current	$I_{DR}$	1.5	A
Channel Dissipation	$P_{ch}^*$	20	W
Channel Temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	$-55 \sim +150$	$^\circ\text{C}$

\*Value at  $T_c=25^\circ\text{C}$

#### POWER VS. TEMPERATURE DERATING



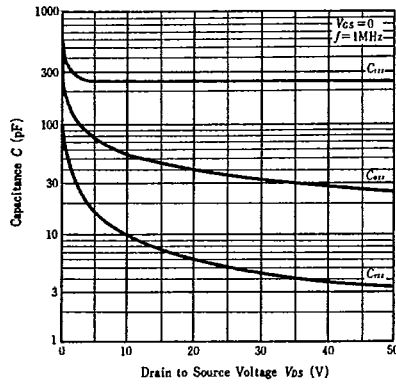
#### ■ ELECTRICAL CHARACTERISTICS ( $T_c=25^\circ\text{C}$ )

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=10\text{mA}, V_{GS}=0$	400	—	—	V
Gate-Source Leak Current	$I_{GSS}$	$V_{GS}=\pm 20\text{V}, V_{DS}=0$	—	—	$\pm 1$	$\mu\text{A}$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=320\text{V}, V_{GS}=0$	—	—	100	$\mu\text{A}$
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D=1\text{mA}, V_{DS}=10\text{V}^*$	2.0	—	4.0	V
Static Drain-Source On State Resistance	$R_{DS(on)}$	$I_D=1\text{A}, V_{GS}=15\text{V}^*$	—	4.0	6.0	$\Omega$
Drain-Source Saturation Voltage	$V_{DS(on)}$	$I_D=1\text{A}, V_{GS}=15\text{V}^*$	—	4.0	6.0	V
Forward Transfer Admittance	$ y_{fs} $	$I_D=1\text{A}, V_{DS}=20\text{V}^*$	0.2	0.4	—	S
Input Capacitance	$C_{iss}$	$V_{DS}=10\text{V}, V_{GS}=0$ $f=1\text{MHz}$	—	250	—	pF
Output Capacitance	$C_{oss}$		—	55	—	pF
Reverse Transfer Capacitance	$C_{rss}$		—	10	—	pF
Turn-on Delay Time	$t_{d(on)}$	$I_D=1\text{A}, V_{GS}=15\text{V}$ $R_L=30\Omega$	—	8	—	ns
Rise Time	$t_r$		—	12	—	ns
Turn-off Delay Time	$t_{d(off)}$		—	30	—	ns
Fall Time	$t_f$		—	15	—	ns
Body-Drain Diode Forward Voltage	$V_{DF}$	$I_F=1\text{A}, V_{GS}=0$	—	1.0	—	V
Body-Drain Diode Reverse Recovery Time	$t_{rr}$	$I_F=1\text{A}, V_{GS}=0$ $di_F/dt=100\text{A}/\mu\text{s}$	—	400	—	ns

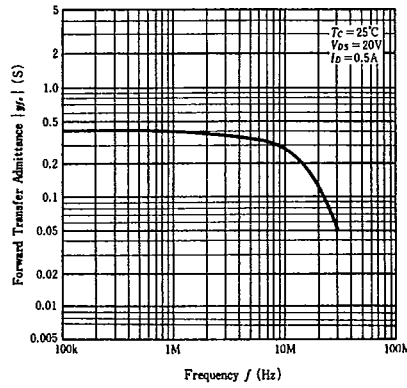
\*Pulse Test



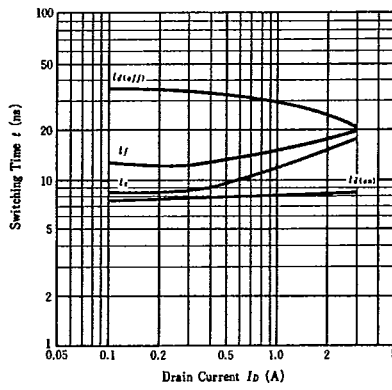
**TYPICAL CAPACITANCE VS. DRAIN-SOURCE VOLTAGE**



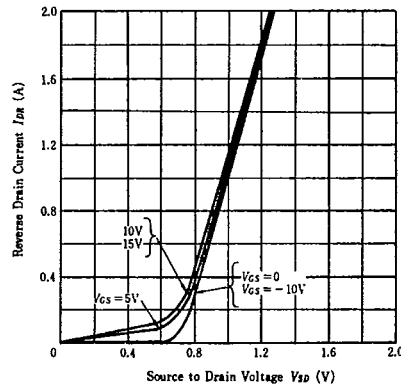
**FORWARD TRANSFER ADMITTANCE VS. FREQUENCY**



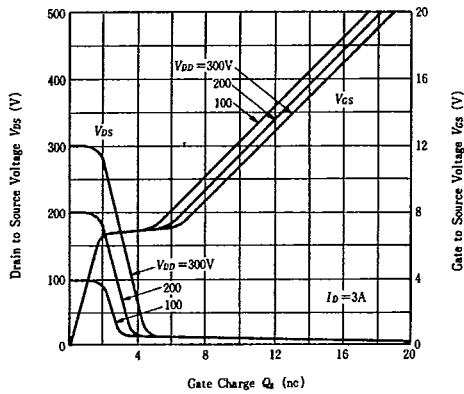
**SWITCHING CHARACTERISTICS**



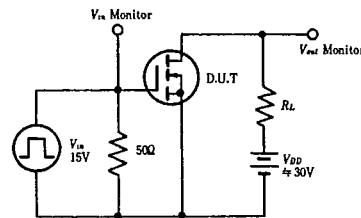
**MAXIMUM BODY-DRAIN DIODE FORWARD VOLTAGE**



**DYNAMIC INPUT CHARACTERISTICS**



**SWITCHING TIME TEST CIRCUIT**



**WAVEFORMS**

