

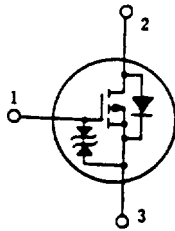
# 2SJ182(L), 2SJ182(S)

## SILICON P-CHANNEL MOS FET 353-218

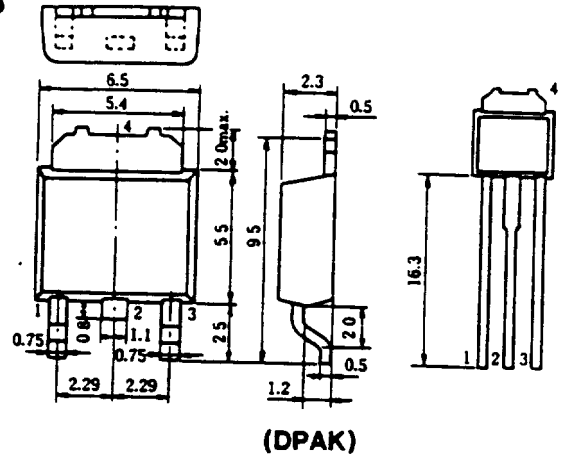
### HIGH SPEED POWER SWITCHING

#### ■ FEATURES

- Low On-Resistance
- High Speed Switching
- Low Drive Current
- 4 V Gate Drive Device
  - Can be driven from 5 V source
- Suitable for Motor Drive, DC-DC Converter, Power Switch and Solenoid Drive



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



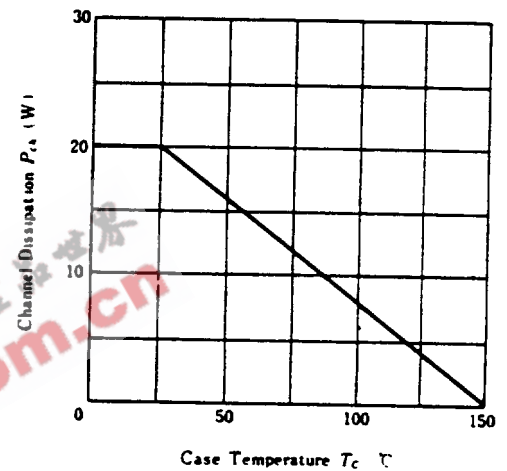
(DPAK)

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

Item	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-60	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current	$I_D$	-3	A
Drain Peak Current	$I_{D(\text{pulse})}$ *	-12	A
Body-Drain Diode Reverse Drain Current	$I_{DR}$	-3	A
Channel Dissipation	$P_{ch}$ **	20	W
Channel Temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$

\*  $PW \leq 10 \mu\text{s}$ , duty cycle  $\leq 1\%$   
\*\* Value at  $T_c = 25^\circ\text{C}$

#### POWER VS. TEMPERATURE DERATING



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

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	$V_{BR-DSS}$	$I_D = -10\text{mA}$ , $V_{GS} = 0$	-60	—	—	V
Gate-Source Breakdown Voltage	$V_{BR-GSS}$	$I_G = \pm 100 \mu\text{A}$ , $V_{DS} = 0$	$\pm 20$	—	—	V
Gate-Source Leak Current	$I_{GSS}$	$V_{GS} = \pm 16\text{V}$ , $V_{DS} = 0$	—	—	$\pm 10$	$\mu\text{A}$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 50\text{V}$ , $V_{GS} = 0$	—	—	100	$\mu\text{A}$
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D = 1\text{mA}$ , $V_{DS} = -10\text{V}$	-1.0	—	2.0	V
Static Drain-Source on State Resistance	$R_{DS(on)}$	$I_D = 2\text{A}$ , $V_{GS} = -10\text{V}$ *	—	0.28	0.40	$\Omega$
		$I_D = 2\text{A}$ , $V_{GS} = -4\text{V}$ *	—	0.40	0.55	
Forward Transfer Admittance	$Y_{fs}$	$I_D = 2\text{A}$ , $V_{DS} = -10\text{V}$ *	1.6	2.7	—	S
Input Capacitance	$C_{iss}$	$V_{DS} = 10\text{V}$ , $V_{GS} = 0$ , $f = 1\text{MHz}$	—	425	—	pF
Output Capacitance	$C_{oss}$		—	225	—	pF
Reverse Transfer Capacitance	$C_{rss}$		—	70	—	pF
Turn-on Delay Time	$t_{d(on)}$	$I_D = 2\text{A}$ , $V_{DS} = -10\text{V}$ , $R_{\theta} = 15\Omega$	—	5	—	ns
Rise Time	$t_r$		—	30	—	ns
Turn-off Delay Time	$t_{d(off)}$		—	160	—	ns
Fall Time	$t_f$		—	85	—	ns
Body-Drain Diode Forward Voltage	$V_{DF}$	$I_F = -3\text{A}$ , $V_{GS} = 0$	—	-1.05	—	V
Body-Drain Diode Reverse Recovery Time	$t_{rr}$	$I_F = -3\text{A}$ , $V_{GS} = 0$ , $di_F/dt = 50\text{A}/\mu\text{s}$	—	140	—	ns

\* Pulse Test