

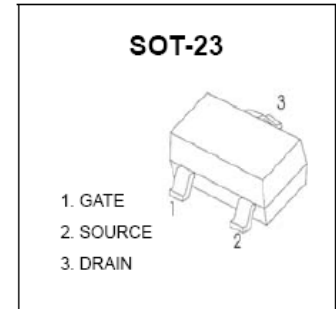
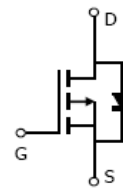


## P-Channel Enhancement Mode Field Effect Transistor

### FEATURE

- High dense cell design for extremely low  $R_{DS(ON)}$ .
- Exceptional on-resistance and maximum DC current capability

MARKING: R1



Maximum ratings (  $T_a=25^{\circ}\text{C}$  unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$I_D$	-4.2	A
Power Dissipation	$P_D$	350	mW
Thermal Resistance from Junction to Ambient (t<5s)	$R_{\theta JA}$	357	$^{\circ}\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55~+150	$^{\circ}\text{C}$



**Electrical characteristics (T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
<b>Off characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-30			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = -24V, V <sub>GS</sub> = 0V			-1	μA
Gate-source leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±12V, V <sub>DS</sub> = 0V			±100	nA
<b>On characteristics</b>						
Drain-source on-resistance (note 1)	R <sub>DS(on)</sub>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -4.2A			65	mΩ
		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -4A			75	mΩ
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -1A			90	mΩ
Forward tranconductance (note 1)	g <sub>FS</sub>	V <sub>DS</sub> = -5V, I <sub>D</sub> = -5A	7			S
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.7		-1.3	V
<b>Dynamic characteristics (note 2)</b>						
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, f = 1MHz		954		pF
Output capacitance	C <sub>oss</sub>			115		pF
Reverse transfer capacitance	C <sub>rss</sub>			77		pF
<b>Switching characteristics (note 2)</b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>GS</sub> = -10V, V <sub>DS</sub> = -15V, R <sub>L</sub> = 3.6Ω, R <sub>GEN</sub> = 6Ω			6.3	ns
Turn-on rise time	t <sub>r</sub>				3.2	ns
Turn-off delay time	t <sub>d(off)</sub>				38.2	ns
Turn-off fall Time	t <sub>f</sub>				12	ns
<b>Drain-source diode characteristics and maximum ratings</b>						
Diode forward voltage (note 1)	V <sub>SD</sub>	I <sub>S</sub> = -1A, V <sub>GS</sub> = 0V			-1	V

**Note :**

1. Pulse Test : Pulse width ≤ 300μs, duty cycle ≤ 2%.
2. These parameters have no way to verify.