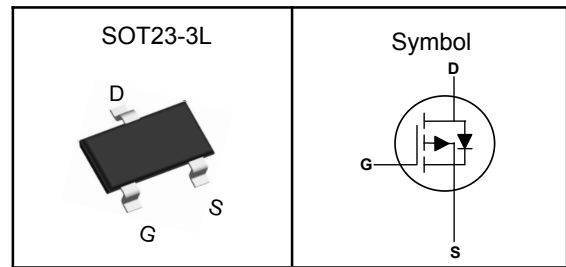


P-Channel Enhancement Mode MOSFET
Features

- Low On Resistance
- Low Gate Charge
- Fast Switching Characteristic
- 100% UIS and Rg Tested

Applications

- Power Management in Desktop Computer
- DC/DC Converters

Pin Description


V_{DSS}	-30	V
$R_{DS(ON)-Typ}$	40	m Ω
I_D	-5.6	A

Absolute Maximum Ratings($T_J=25^\circ\text{C}$, Unless Otherwise Noted)

Symbol	Parameter	Rating	Unit
V_{DSS}	Drain-Source Voltage	-30	V
V_{GSS}	Gate-Source Voltage	± 20	V
T_J	Maximum Junction Temperature	-55 to 150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
$I_{DM}^{①}$	Pulse Drain Current Tested	-22	A
I_D	Continuous Drain Current	-5.6	A
P_D	Maximum Power Dissipation	1.5	W

Thermal Characteristics

Symbol	Parameter	Rating	Unit
$R_{\theta JA}^{③}$	Thermal Resistance-Junction to Ambient	82	$^\circ\text{C/W}$

Note ① : Max. current is limited by bonding wire.

Note ② : UIS tested and pulse width are limited by maximum junction temperature 150 $^\circ\text{C}$.

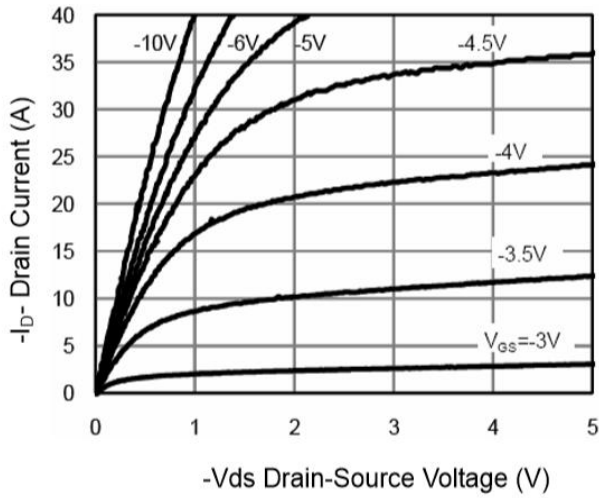
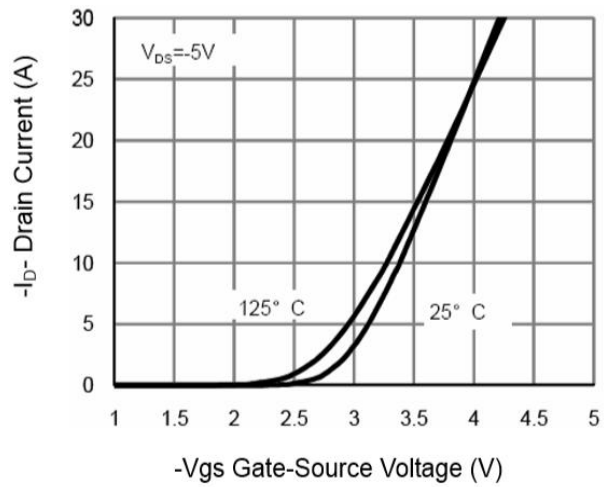
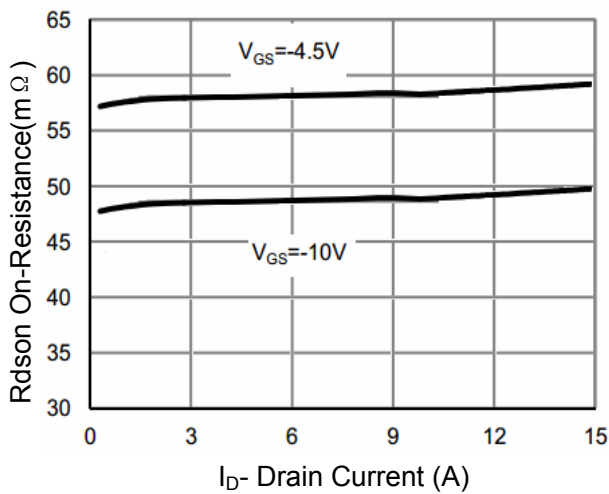
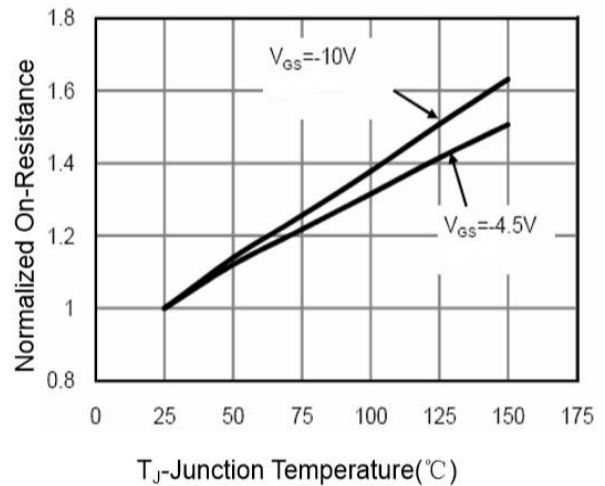
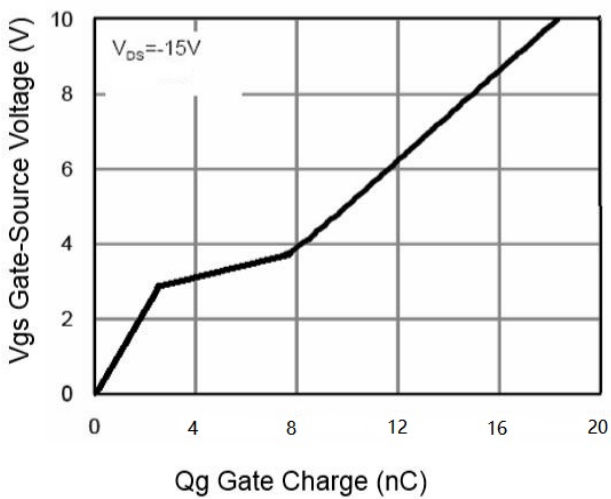
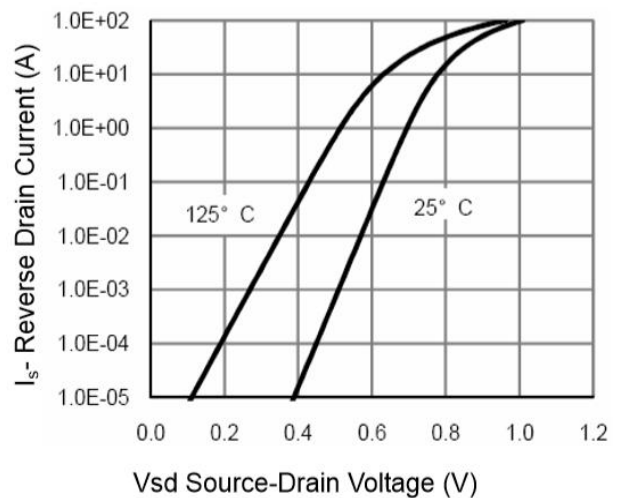
Note ③ : Surface Mounted on 1in² FR-4 board with 1oz.

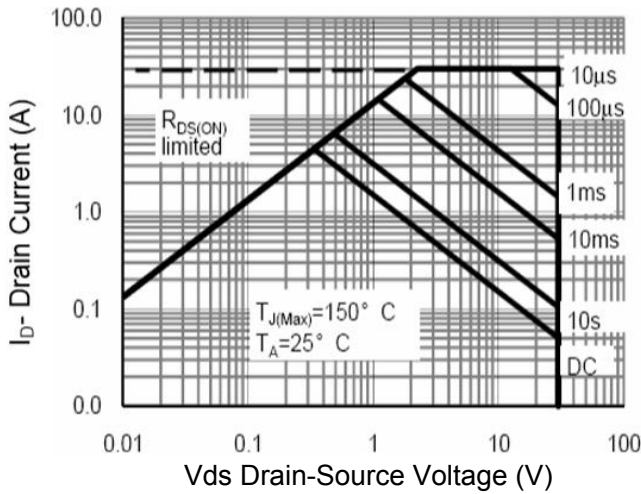
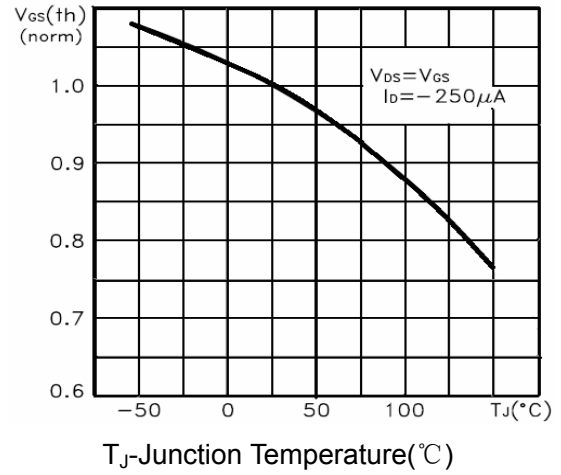
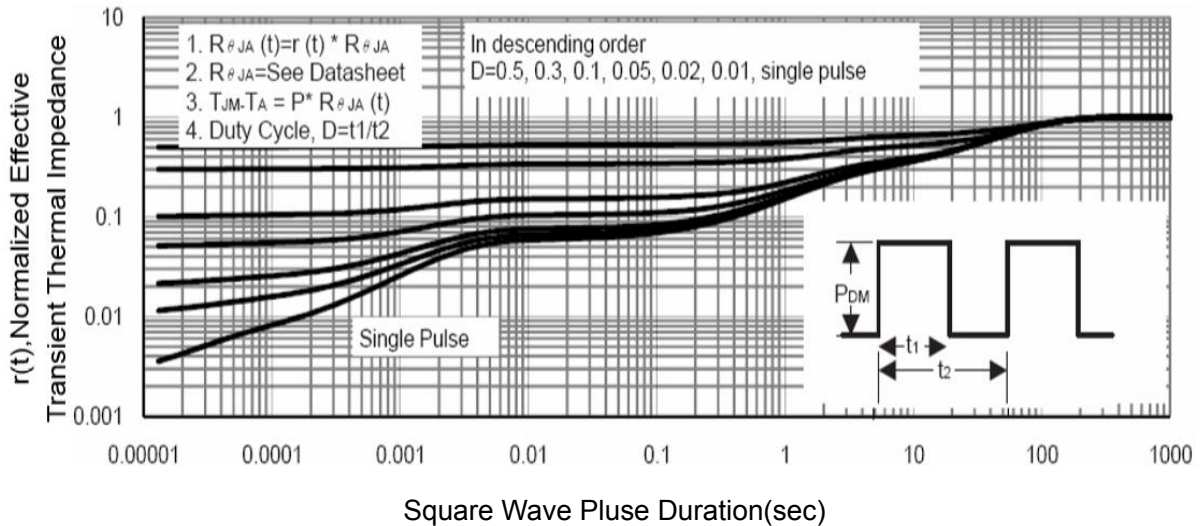
**P-Channel Enhancement Mode MOSFET****Electrical Characteristics** ($T_J=25^\circ\text{C}$, Unless Otherwise Noted)

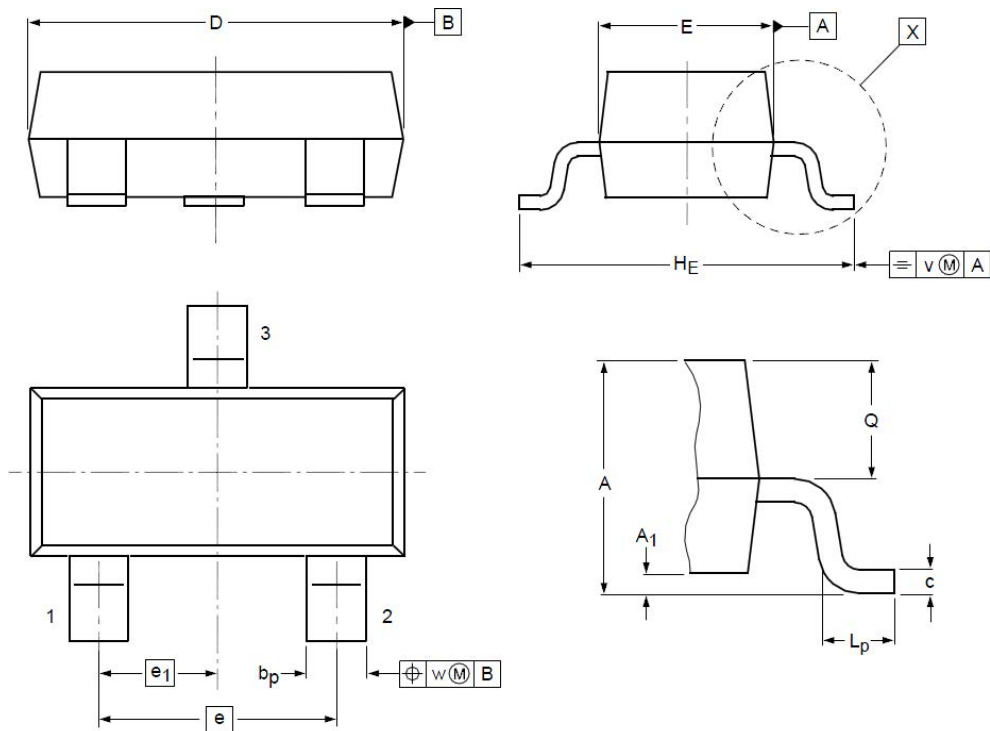
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Static Electrical Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-30	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-30V, V_{GS}=0V$	---	---	-1	μA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0	---	-2.0	V
I_{GSS}	Gate Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
$R_{DS(on)}$	Drain-Source On-state Resistance	$V_{GS}=-10V, I_D=-5.6A$	---	40	50	m Ω
		$V_{GS}=-4.5V, I_D=-4A$	---	58	75	m Ω
Dynamic Characteristics^⑤						
C_{iss}	Input Capacitance	$V_{GS}=0V, V_{DS}=-15V, \text{Freq.}=1\text{MHz}$	---	1000	---	pF
C_{oss}	Output Capacitance		---	160	---	
C_{rss}	Reverse Transfer Capacitance		---	100	---	
$T_{d(on)}$	Turn-on Delay Time	$V_{GS}=-10V, V_{DD}=-15V, I_D=-4A, R_G=3\Omega$	---	13	---	nS
T_r	Turn-on Rise Time		---	7	---	
$T_{d(off)}$	Turn-off Delay Time		---	40	---	
T_f	Turn-off Fall Time		---	19	---	
Q_g	Total Gate Charge	$V_{GS}=-10V, V_{DS}=-15V, I_D=-4A$	---	19	---	nC
Q_{gs}	Gate-Source Charge		---	4.5	---	
Q_{gd}	Gate-Drain Charge		---	3.8	---	
Source-Drain Characteristics						
$V_{SD}^{④}$	Diode Forward Voltage	$I_S=-5.6A, V_{GS}=0V$	---	---	-1.2	V

Note ④: Pulse test (pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$).

Note ⑤: Guaranteed by design, not subject to production testing.

P-Channel Enhancement Mode MOSFET
Typical Characteristics

Figure 1 Output Characteristics

Figure 2 Transfer Characteristics

Figure 3 Rdson- Drain Current

Figure 4 Rdson-Junction Temperature

Figure 5 Gate Charge

Figure 6 Source- Drain Diode Forward

P-Channel Enhancement Mode MOSFET

Figure 7 Safe Operation Area

Figure 8 $V_{GS(th)}$ vs Junction Temperature

Figure 9 Normalized Maximum Transient Thermal Impedance

P-Channel Enhancement Mode MOSFET
SOT23-3L Package Outline Dimensions


Symbol	Dimensions (unit:mm)			Symbol	Dimensions (unit:mm)		
	Min	Typ	Max		Min	Typ	Max
A	0.90	1.07	1.25	e₁	--	0.95	--
A₁	0.01	0.05	0.10	H_E	2.50	2.80	3.00
b_p	0.30	0.40	0.50	L_p	0.30	0.45	0.60
c	0.10	0.15	0.20	Q	0.23	0.28	0.33
D	2.70	2.90	3.10	V	--	0.20	--
E	1.40	1.55	1.75	W	--	0.20	--
e	--	1.90	--				