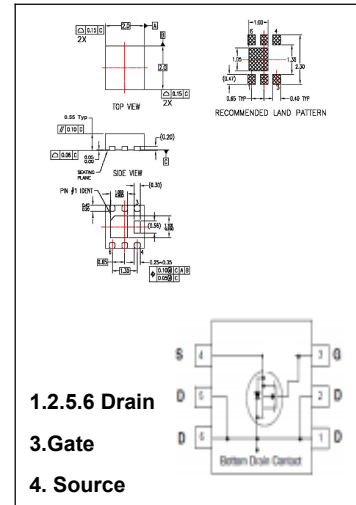


DFN2020 Plastic-Encapsulate MOSFETS

LJ8022PT14G

P-Channel MOSFET

V _{(BR)DSS}	R _{DS(on)MAX}	I _D
-12V	28mΩ@-4.5V	-8A
	32mΩ@-3.7V	
	40mΩ@-2.5V	
	63mΩ@-1.8V	
	150mΩ@-1.5V	



FEATURE

- Advanced trench MOSFET process technology
- Ultra low on-resistance with low gate charge

APPLICATION

- PWM application
- Load switch
- Battery charge in cellular handset

ABSOLUTE MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{DS}	Drain-Source Voltage	-12	V
V _{GS}	Gate-Source Voltage	±8	
I _D	Drain Current-Continuous	-8	A
I _{DM} *	Drain Current-Pulsed	-28	
R _{θJA}	Thermal Resistance from Junction to Ambient	357	°C/W
T _j	Junction Temperature	150	
T _{STG}	Storage Temperature	-55 ~+150	

*Repetitive rating: Pluse width limited by junction temperature.

MOSFET ELECTRICAL CHARACTERISTICS

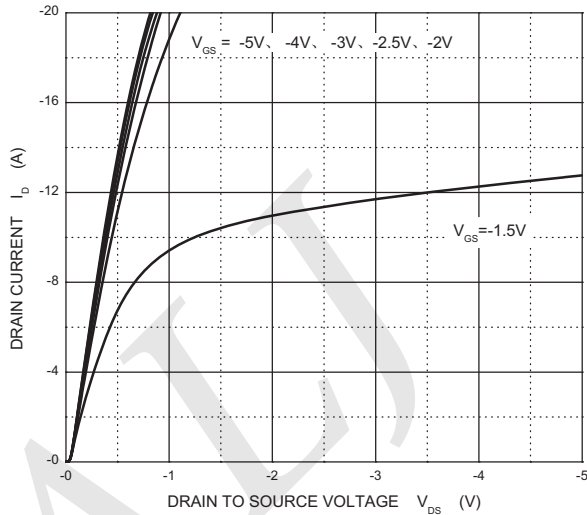
$T_a=25\text{ }^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
$V_{(BR)DSS}$	Drain-source breakdown voltage	$V_{GS} = 0V, I_D = -250\mu A$	-12			V
I_{DSS}	Zero gate voltage drain current	$V_{DS} = -12V, V_{GS} = 0V$			-1	μA
I_{GSS}	Gate-body leakage current	$V_{GS} = \pm 8V, V_{DS} = 0V$			± 0.1	μA
$V_{GS(th)}$	Gate threshold voltage (note 1)	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4		-1	V
$R_{DS(on)}$	Drain-source on-resistance (note 1)	$V_{GS} = -4.5V, I_D = -5A$			28	m Ω
		$V_{GS} = -3.7V, I_D = -4.6A$			32	
		$V_{GS} = -2.5V, I_D = -4.3A$			40	
		$V_{GS} = -1.8V, I_D = -1A$			63	
		$V_{GS} = -1.5V, I_D = -0.5A$			150	
g_{FS}	Forward tranconductance (note 1)	$V_{DS} = -5V, I_D = -5A$		18		S
Dynamic characteristics (note 2)						
C_{iss}	Input Capacitance	$V_{DS} = -6V, V_{GS} = 0V, f = 1MHz$		1275		pF
C_{oss}	Output Capacitance			255		pF
C_{rss}	Reverse Transfer Capacitance			236		pF
R_g	Gate resistance	$f = 1MHz$	1.9		19	Ω
Q_g	Total Gate Charge	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -5A$		14	21	nC
Q_{gs}	Gate-Source Charge			2.3		nC
Q_{gd}	Gate-Drain Charge			3.6		nC
$t_{d(on)}$	Turn-on delay time	$V_{DD} = -6V, V_{GEN} = -4.5V, I_D = -4A$ $R_L = 6\Omega, R_{GEN} = 1\Omega$		26	40	ns
t_r	Turn-on rise time			24	40	ns
$t_{d(off)}$	Turn-off delay time			45	70	ns
t_f	Turn-off fall time			20	35	ns
Source-Drain Diode characteristics						
I_S	Diode forward current				-8	A
I_{SM}	Diode pulsed forward current				-28	A
V_{DS}	Diode Forward voltage (note 1)	$V_{GS} = 0V, I_S = -4A$			-1.2	V
t_{rr}	Diode reverse recovery time (note 2)	$I_F = -4A, dI/dt = 100A/\mu s$		24	48	ns
Q_{rr}	Diode reverse recovery charge (note 2)			8	16	nC

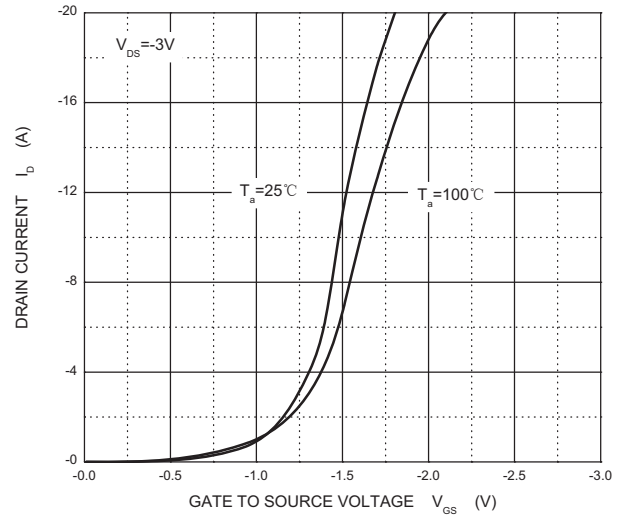
Notes : 1. Pulse test; pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Typical Characteristics

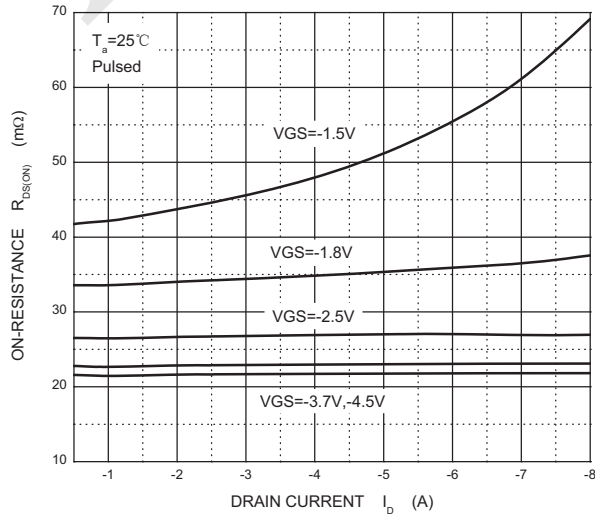
Output Characteristics



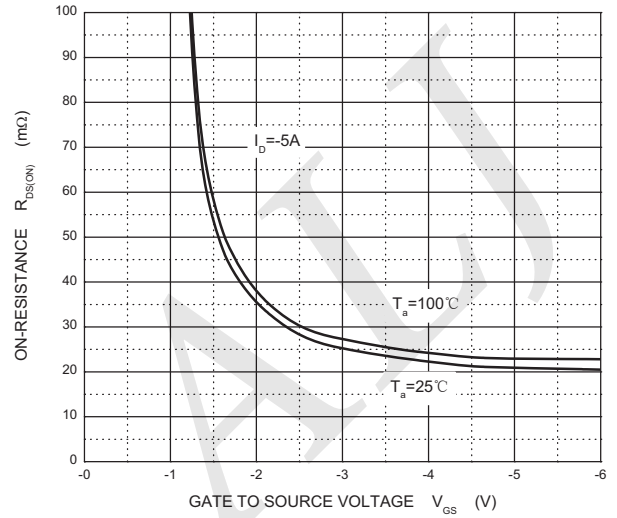
Transfer Characteristics



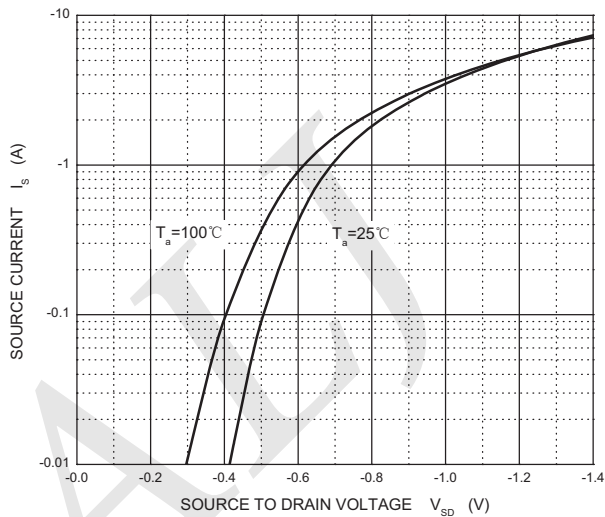
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage

