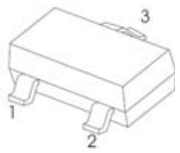
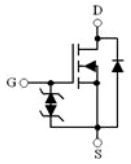
SOT-23 Plastic-Encapsulate MOSFETS

CJ8820 N-Channel Enhancement Mode Field Effect Transistor

SOT-23



1. GATE
2. SOURCE
3. DRAIN



DESCRIPTION

The CJ8820 use advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. It is ESD protected. This device is suitable for use as a uni-directional or bi-directional load switch,facilitated by its common-drain configuration.

Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Units
Drain-source voltage	V_{DS}	20	V
Gate-source voltage	V_{GS}	±12	V
Continuous drain current (t ≤10s)	I_D	7	A
Pulsed drain current *	I_{DM}	25	A
Power dissipation	P_D	0.3	W
Thermal resistance from junction to ambient	$R_{\theta JA}$	417	℃/W
Junction temperature	T_J	150	℃
Storage temperature	T_{stg}	-55~ 150	℃

* Repetitive rating : Pulse width limited by junction temperature.

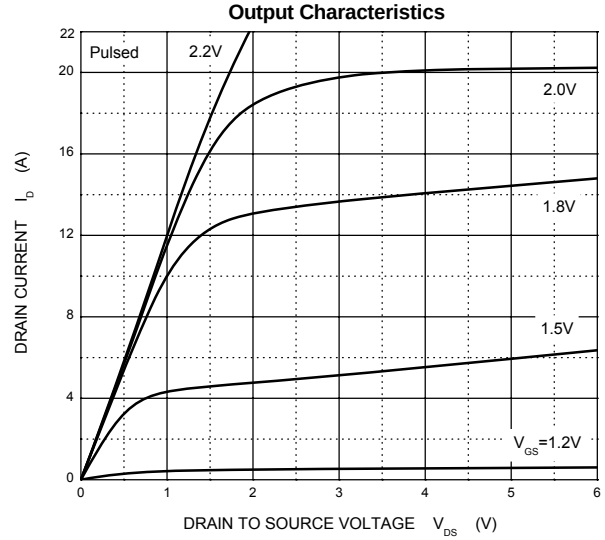
Electrical characteristics (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =16V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±10	μA
Gate threshold voltage (note 1)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5		1.1	V
Drain-source on-resistance (note 1)	$R_{DS(on)}$	V_{GS} =10V, I_D =7A			21	mΩ
		V_{GS} =4.5V, I_D =6.6A			24	mΩ
		V_{GS} =3.6V, I_D =6A			28	mΩ
		V_{GS} =2.5V, I_D =5.5A			32	mΩ
		V_{GS} =1.8V, I_D =2A			50	mΩ
Forward tranconductance (note 1)	g_{FS}	V_{DS} =5V, I_D =7A		20		S
Diode forward voltage(note 1)	V_{SD}	I_S=1A, V_{GS} = 0V			1	V
SWITCHING PARAMETERS(note 2)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=5V,V_{DS}=10V, R_L=1.4Ω,R_{GEN}=3Ω		7		ns
Turn-on rise time	t_r			13		ns
Turn-off delay time	$t_{d(off)}$			29		ns
Turn-off fall time	t_f			11		ns
Total Gate Charge	Q_g	V_{DS} =10V,V_{GS} =4.5V,I_D =7A			12	nC
Gate-Source Charge	Q_{gs}			1.2		nC
Gate-Drain Charge	Q_{gd}			3		nC

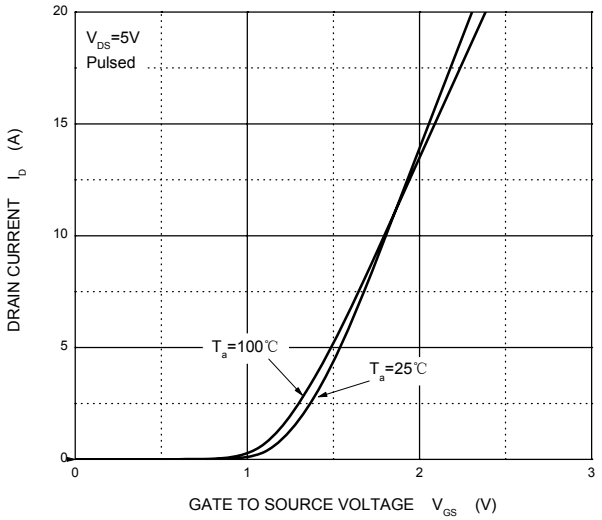
Notes :

1. Pulse Test : Pulse width≤300μs, duty cycle≤0.5%.
2. Guaranteed by design, not subject to production testing.

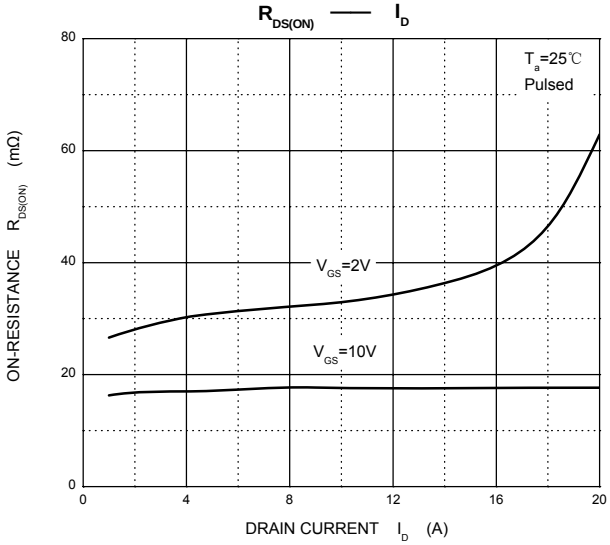
Output Characteristics



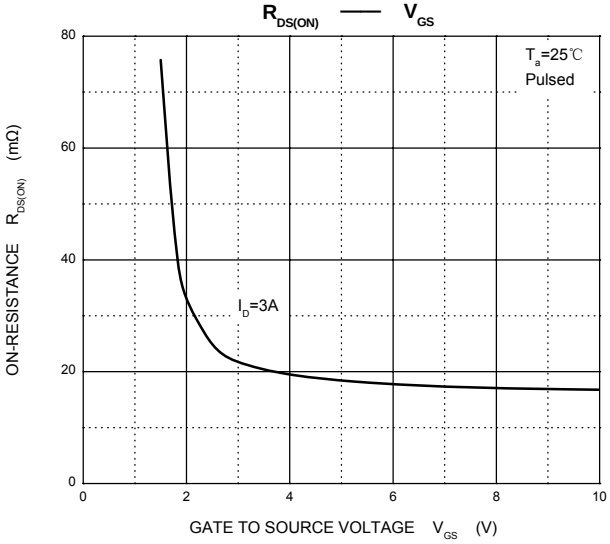
Transfer Characteristics



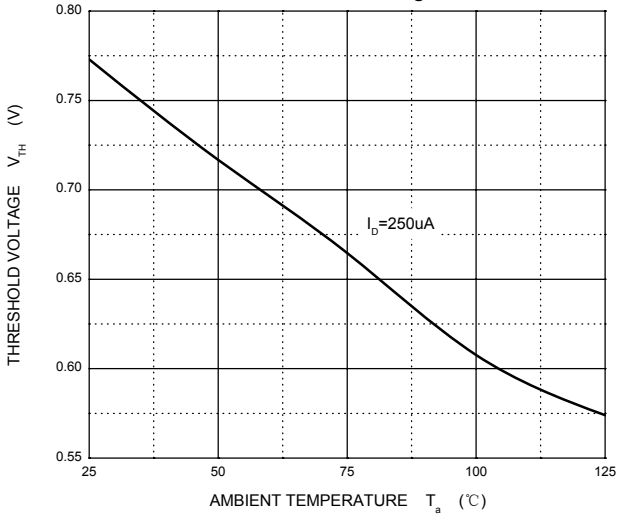
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



Threshold Voltage



I_S — V_{SD}