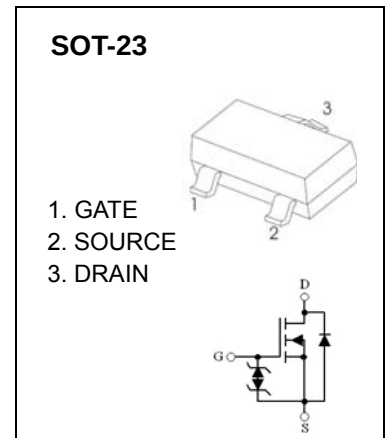


SOT-23 Plastic-Encapsulate MOSFETS

CJ8820 N-Channel Enhancement Mode Field Effect Transistor

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

Parameter	Symbol	Value	Units
Drain-source voltage	V_{DS}	20	V
Gate-source voltage	V_{GS}	± 12	V
Continuous drain current ($t \leq 10\text{s}$)	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	$^{\circ}\text{C/W}$
Junction temperature	T_J	150	$^{\circ}\text{C}$
Storage temperature	T_{stg}	-55~ 150	$^{\circ}\text{C}$

* Repetitive rating : Pulse width limited by junction temperature.

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 16V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 10	μA
Gate threshold voltage (note 1)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5		1.1	V
Drain-source on-resistance (note 1)	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 7A$			21	m Ω
		$V_{GS} = 4.5V, I_D = 6.6A$			24	m Ω
		$V_{GS} = 3.6V, I_D = 6A$			28	m Ω
		$V_{GS} = 2.5V, I_D = 5.5A$			32	m Ω
		$V_{GS} = 1.8V, I_D = 2A$			50	m Ω
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	$t_{d(on)}$	$V_{GS} = 5V, V_{DS} = 10V,$ $R_L = 1.4\Omega, R_{GEN} = 3\Omega$		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 $\leq 300\mu s$, duty cycle $\leq 0.5\%$.
2. Guaranteed by design, not subject to production testing.

