

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

Typical applications are DC-DC converters, power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

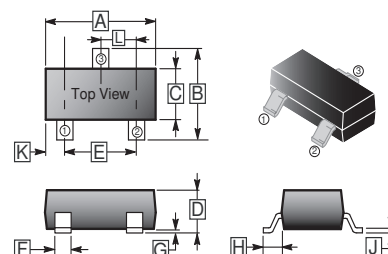
FEATURES

- High Density Cell Design for Extremely Low $R_{DS(ON)}$
- Rugged and Reliable

APPLICATION

- Direct Logic-Level Interface: TTL/CMOS
- Drivers: Relays, Solenoids, Lamps, Hammers; Display, Memories, Transistors, etc.
- Battery Operated Systems
- Solid-State Relays

SOT-323



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.80	2.20	G	0.1	REF.
B	1.80	2.55	H	0.525	REF.
C	1.1	1.4	J	0.05	0.25
D	0.80	1.15	K	0.8	TYP.
E	1.20	2.00	L	0.65	TYP.
F	0.15	0.50			

MARKING

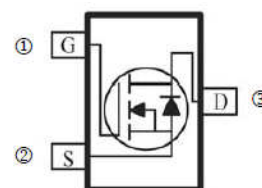
SS

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-323	3K	7 inch

ORDER INFORMATION

Part Number	Type
SSF318WJ-C	Lead (Pb)-free and Halogen-free



ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	50	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	220	mA
Power Dissipation	P_D	0.3	W
Maximum Junction-Ambient	$R_{\theta JA}$	417	$^{\circ}\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	150, -55~150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

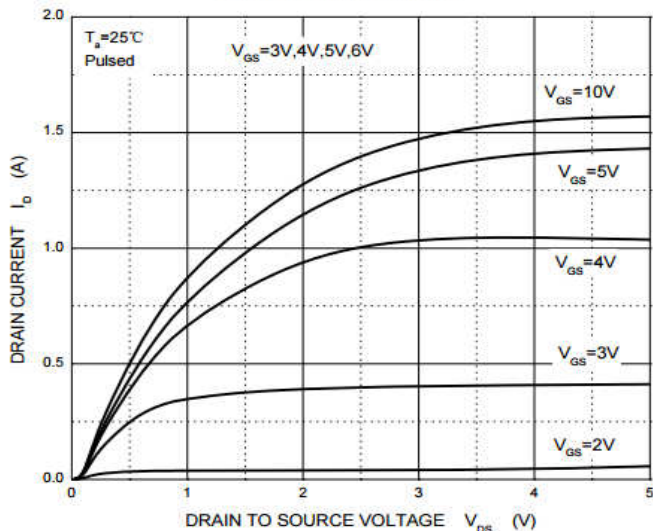
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	50	-	-	V	$V_{GS}=0, I_D=250\mu\text{A}$
Gate-Threshold Voltage ¹	$V_{GS(th)}$	0.8	-	1.5	V	$V_{DS}=V_{GS}, I_D=1\text{mA}$
Gate-Body Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{DS}=0, V_{GS}= \pm 20\text{V}$
Drain-Source Leakage Current	I_{DSS}	-	-	0.5	μA	$V_{DS}=50\text{V}, V_{GS}=0$
		-	-	100	nA	$V_{DS}=30\text{V}, V_{GS}=0$
Drain-Source On-Resistance ¹	$R_{DS(ON)}$	-	-	3.5	Ω	$V_{GS}=10\text{V}, I_D=220\text{mA}$
		-	-	6		$V_{GS}=4.5\text{V}, I_D=220\text{mA}$
Forward Transconductance ¹	g_{fs}	0.12	-	-	S	$V_{DS}=10\text{V}, I_D=220\text{mA}$
Turn-on Delay Time ¹	$T_{d(on)}$	-	5	-	nS	$V_{DD}=30\text{V}$ $V_{DS}=10\text{V}$ $R_{GEN}=6\Omega$ $I_D=0.29\text{A}$
Rise Time ¹	T_r	-	18	-		
Turn-off Delay Time ¹	$T_{d(off)}$	-	36	-		
Fall Time ¹	T_f	-	14	-		
Input Capacitance	C_{iss}	-	27	-	pF	$V_{GS}=0,$ $V_{DS}=25\text{V},$ $f=1\text{MHz}$
Output Capacitance	C_{oss}	-	13	-		
Reverse Transfer Capacitance	C_{rss}	-	6	-		
Drain-Source Diode Characteristics						
Diode Forward Voltage ¹	V_{SD}	-	-	1.4	V	$I_S=0.44\text{V}, V_{GS}=0$

Note:

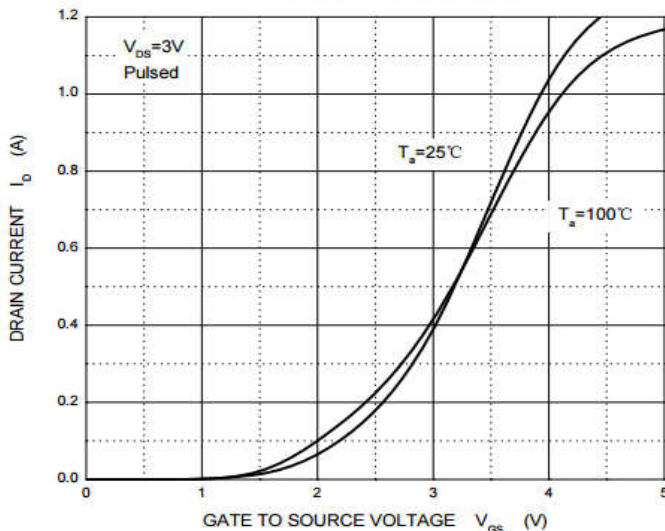
1. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

CHARACTERISTIC CURVE

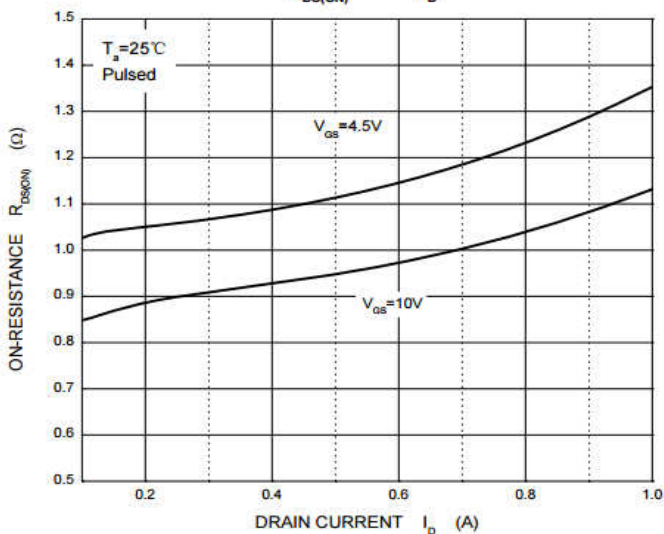
Output Characteristics



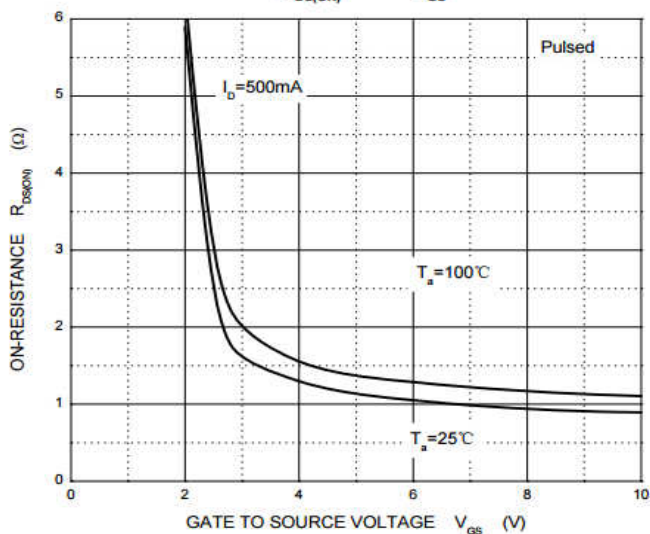
Transfer Characteristics



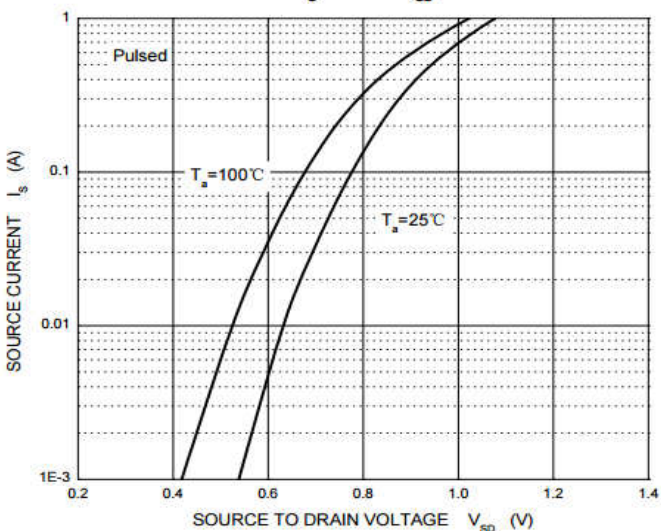
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage

