

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

- Lower threshold Voltage
- ESD protection: 1500V

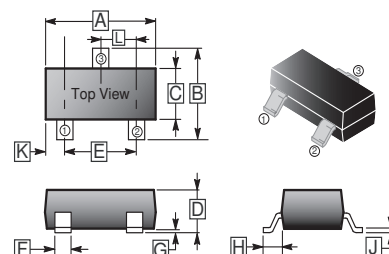
## MARKING

J2

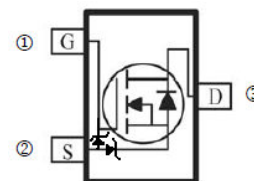
## PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-323	3K	7 inch

### 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			



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	50	V
Continuous Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	200	mA
Pulsed Drain Current @ $t_p \leq 10\mu\text{s}$	$I_{DM}$	800	mA
Total Power Dissipation <sup>1</sup>	$P_D$	$T_A=25^\circ\text{C}$	150
		Derate above $25^\circ\text{C}$	1.2
Thermal Resistance from Junction to Ambient <sup>1</sup>	$R_{\theta JA}$	833	$^\circ\text{C} / \text{W}$
Maximum Lead Temperature for Soldering Purposes @ for 10 seconds	$T_L$	260	$^\circ\text{C}$
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

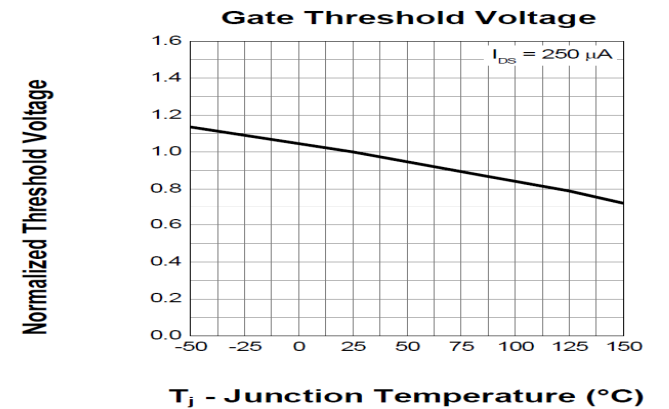
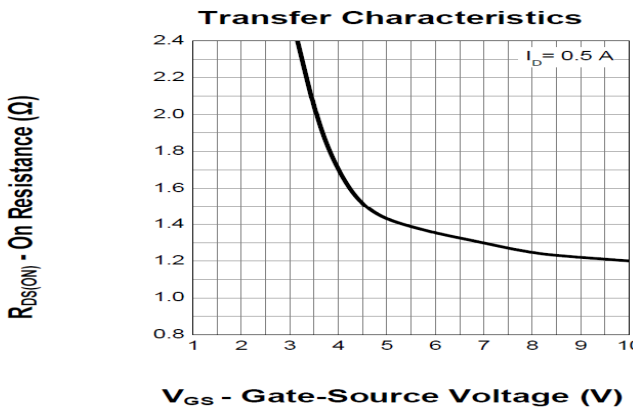
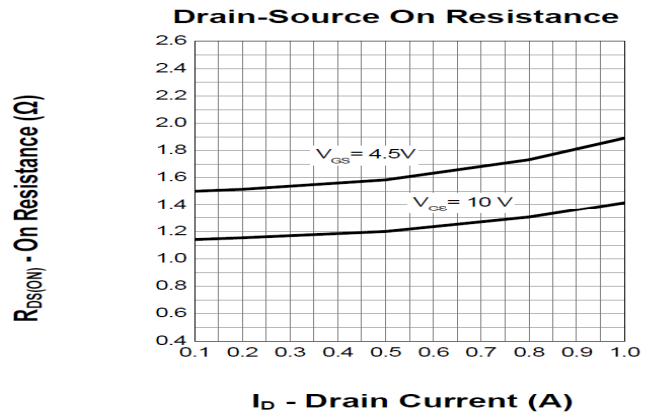
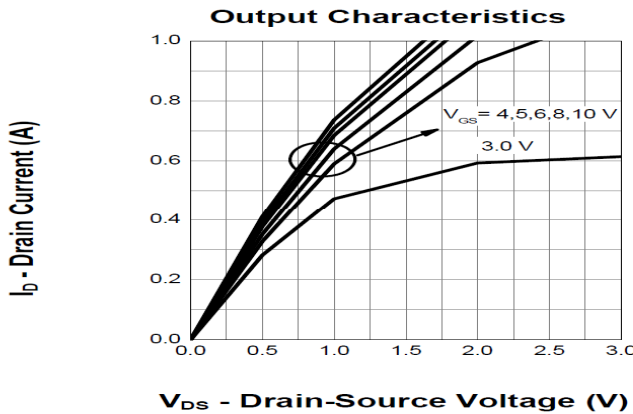
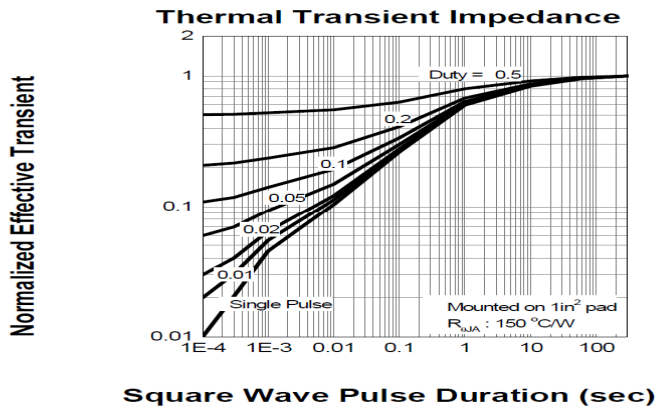
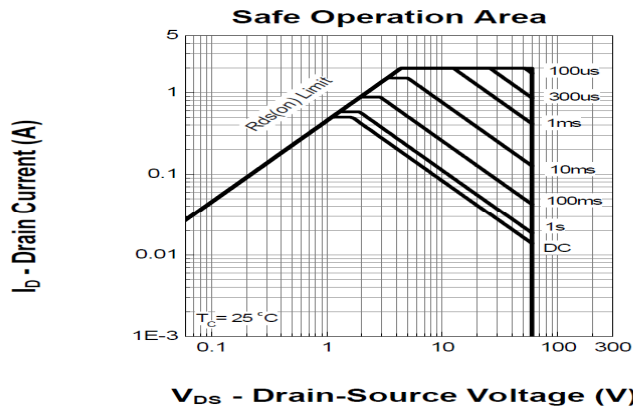
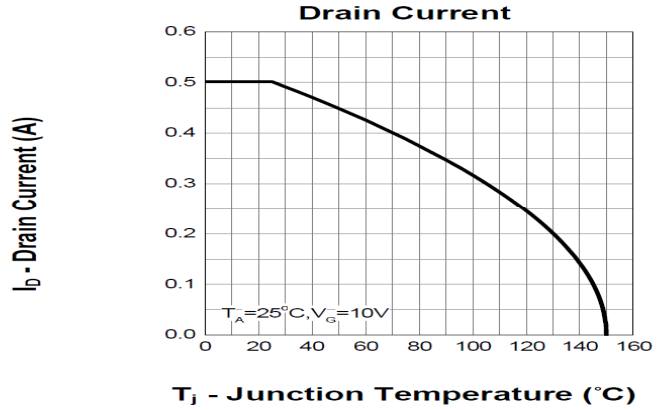
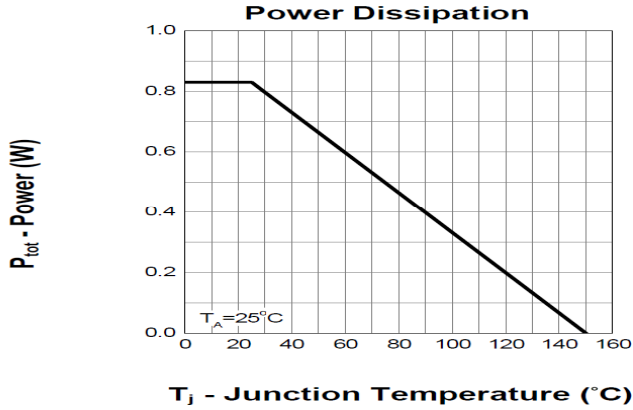
**ELECTRICAL CHARACTERISTICS** ( $T_A=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	50	-	-	V	$V_{GS}=0, I_D=250\mu\text{A}$
Drain-Source Leakage Current	$I_{DSS}$	-	-	0.1	$\mu\text{A}$	$V_{DS}=25\text{V}, V_{GS}=0$
		-	-	0.5		$V_{DS}=50\text{V}, V_{GS}=0$
Forward Gate-Body Leakage Current	$I_{GSSF}$	-	-	10	$\mu\text{A}$	$V_{GS}=20\text{V}$
Reverse Gate-Body Leakage Current	$I_{GSSR}$	-	-	-10	$\mu\text{A}$	$V_{GS}= -20\text{V}$
<b>On Characteristics <sup>2</sup></b>						
Gate-Threshold Voltage	$V_{GS(th)}$	0.5	-	1.5	V	$V_{DS}=V_{GS}, I_D=1\text{mA}$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	-	5.6	10	$\Omega$	$V_{GS}=2.75\text{V}, I_D<200\text{mA}, T_A= -40^\circ\text{C} \sim 85^\circ\text{C}$
		-	-	3.5		$V_{GS}=5\text{V}, I_D=200\text{mA}$
Forward Transconductance	$g_{fs}$	100	-	-	mS	$V_{DS}=25\text{V}, I_D=200\text{mA}, f=1\text{KHz}$
<b>Switch Characteristics</b>						
Turn-on Delay Time	$T_{d(on)}$	-	3.8	-	nS	$V_{DD}=30\text{V}$ $V_{GEN}=10\text{V}$ $R_G=25\Omega$ $R_L=60\Omega$ $I_D=500\text{mA}$
Turn-off Delay Time	$T_{d(off)}$	-	19	-		
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	-	22.8	-	pF	$V_{GS}=0$ $V_{DS}=25\text{V}$ $f=1\text{MHz}$
Output Capacitance	$C_{oss}$	-	3.5	-		
Reverse Transfer Capacitance	$C_{rss}$	-	2.9	-		

Notes:

- On a 1x0.75x0.062 inch FR4-board.
- Pulse Test: Pulse width  $\leq 300 \mu\text{s}$ , duty cycle  $\leq 2\%$ .

**CHARACTERISTIC CURVE**



**CHARACTERISTIC CURVE**

