

N-Channel 60V (D-S) MOSFET

RC3422

GENERAL DESCRIPTION

The RC3422 is the N-Channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application such as cellular phone and notebook computer power management and other battery powered circuits where high-side switching and low in-line power loss are needed in a very small outline surface mount package.

FEATURES

- $R_{DS(ON)} \leq 100m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} \leq 130m\Omega @ V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- Capable doing Cu wire bonding

APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- Load Switch
- DSC

Feature

60V/3A, $R_{DS(ON)} = 80m\Omega(MAX) @ V_{GS} = 4.5V$.

$R_{DS(ON)} = 140m\Omega(MAX) @ V_{GS} = 2.5V$.

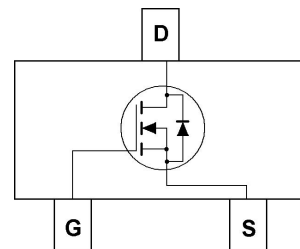
Super High dense cell design for extremely low $R_{DS(ON)}$.

Reliable and Rugged.

SOT23-3 for Surface Mount Package.



SOT23-3



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Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V

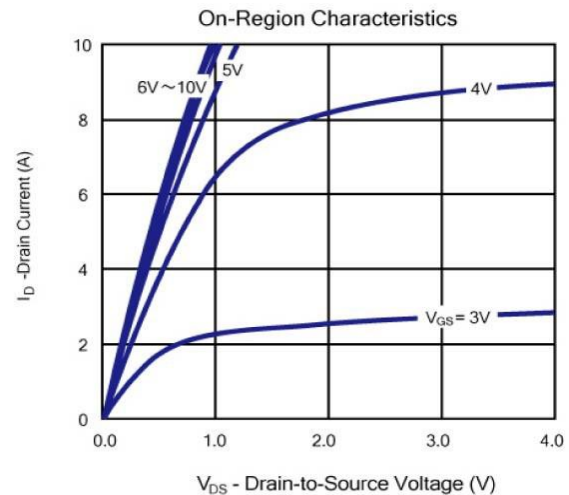
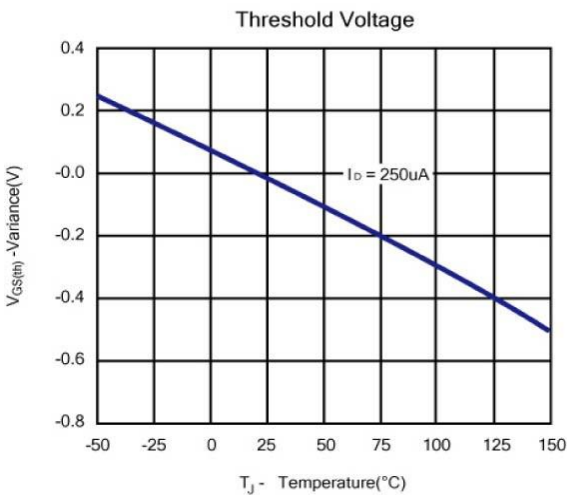
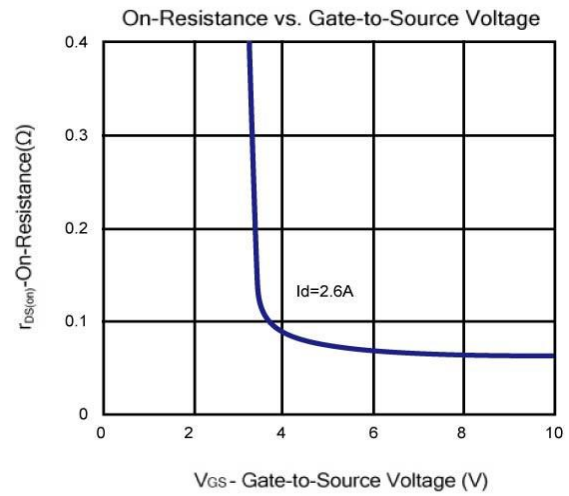
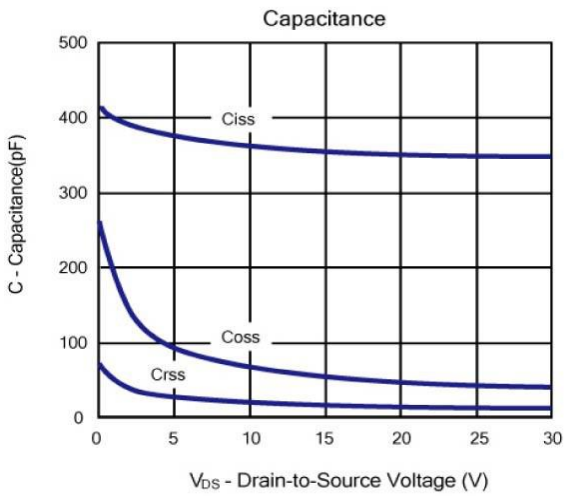
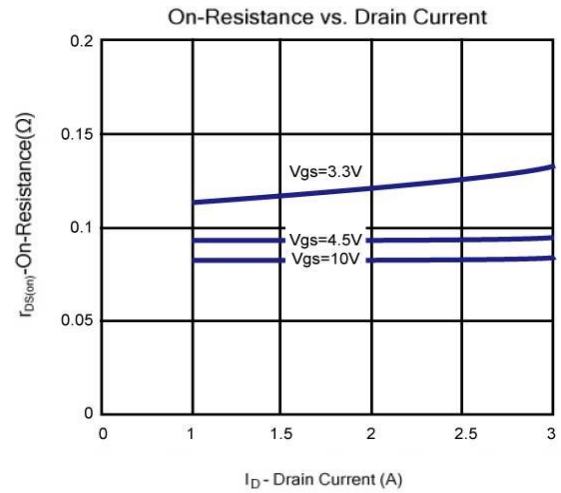
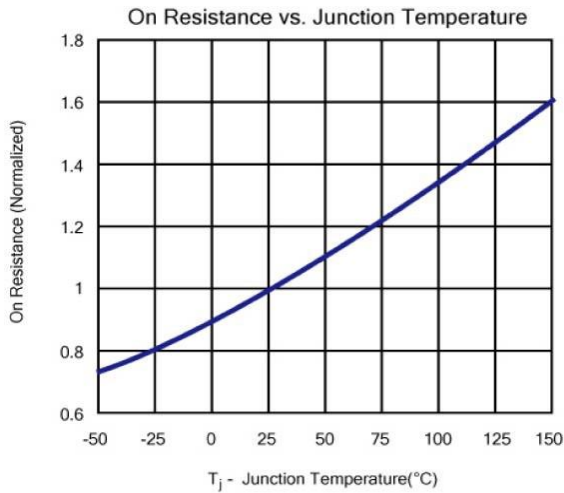
Electrical Characteristics ($T_j=25^{\circ}\text{C}$ Unless Otherwise Specified)

Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
BV_{DS}	Drain-Source Breakdown Voltage	$V_{GS}=0, I_D=250\mu\text{A}$	60			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	1		3	V
I_{GSS}	Gate Body Leakage	$V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=60\text{V}, V_{GS}=0\text{V}$			1	μA
$r_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10\text{V}, I_D=2.6\text{A}$		82	100	m Ω
		$V_{GS}=4.5\text{V}, I_D=2.1\text{A}$		96	130	
		$V_{GS}=3.3\text{V}, I_D=1.8\text{A}$		139	200	
V_{SD}	Diode Forward Voltage	$I_S=1.0\text{A}, V_{GS}=0\text{V}$		0.8	1.2	V
DYNAMIC						
Q_g	Total Gate Charge	$V_{DS}=30\text{V}, V_{GS}=10\text{V}, I_D=2.6\text{A}$		12		nC
Q_g	Total Gate Charge	$V_{DS}=30\text{V}, V_{GS}=4.5\text{V}, I_D=2.6\text{A}$		6.5		
Q_{gs}	Gate-Source Charge			2.2		
Q_{gd}	Gate-Drain Charge			2.7		
C_{iss}	Input capacitance	$V_{DS}=30\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$		350		pF
C_{oss}	Output Capacitance			40		
C_{rss}	Reverse Transfer Capacitance			12		
R_g	Gate Resistance	$V_{DS}=0\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$		0.7		Ω
$t_{d(on)}$	Turn-On Delay Time	$V_{DD}=20\text{V}, R_L=20\Omega$ $I_D=1\text{A}, V_{GEN}=10\text{V}$ $R_G=1\Omega$		10		ns
t_r	Turn-On Rise Time			11		
$t_{d(off)}$	Turn-Off Delay Time			29		
t_f	Turn-Off Fall Time			3		

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Typical Characteristics (T_J = 25°C Noted)



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