



Dual N-Channel Enhancement Mode MOSFET

● **Features**

20V/0.7A ,

$R_{DS(ON)} = 140m\Omega @ V_{GS} = 4.5V$

$R_{DS(ON)} = 180m\Omega @ V_{GS} = 2.5V$

$R_{DS(ON)} = 270m\Omega @ V_{GS} = 1.8V$

● **APPLICATIONS**

Replace Digital Transistor

Battery Operated Systems

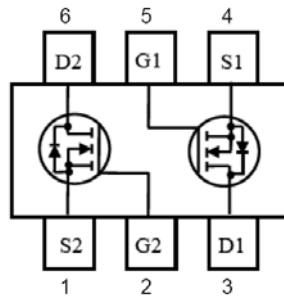
Power Supply Converter Circuits

Load/Power Switching Cell Phones, Pagers

● **General Description**

This device uses advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. The low operation voltage and high switching speed make it ideal for portable equipments.

● **Pin Configuration**



SOT363(Top View)

● **Absolute Maximum Ratings** ($T_A=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Maximum	Units	
Drain-Source Voltage	V_{DS}	20	V	
Gate-Source Voltage	V_{GS}	± 8		
Continuous Drain Current	I_D	$T_A=25^\circ C$	0.70	A
		Pulsed	2	
Power Dissipation	P_D	0.250	W	
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$	

Note1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inches. The rating is for each chip in the package.



- **Electrical Characteristics** ($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
STATIC PARAMETERS						
BV_{DSS}	Drain-Source Breakdown Voltage	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$	20			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=16\text{V}, V_{GS}=0$			-1	uA
I_{GSS}	Gate-Body leakage current	$V_{DS}=0\text{V}, V_{GS}=\pm 8\text{V}$			± 0.1	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	0.35	0.90	1	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS} = 4.5 \text{ V}, I_D = 0.6 \text{ A}$		140	450	mΩ
		$V_{GS} = 2.5 \text{ V}, I_D = 0.5 \text{ A}$		180	765	
		$V_{GS} = 1.8 \text{ V}, I_D = 0.35 \text{ A}$		270	850	
V_{SD}	Diode Forward Voltage	$I_S=0.15\text{A}, V_{GS}=0\text{V}$		0.68	1.2	V
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	$V_{GS}=0\text{V}, V_{DS}=6\text{V}, f=200\text{KHz}$		130		pF
C_{oss}	Output Capacitance			70		
C_{rss}	Reverse Transfer Capacitance			100		
SWITCHING PARAMETERS						
$t_{D(on)}$	Turn-On Delay Time	$V_{GS}=4.5\text{V}, V_{DS}=6\text{V}, R_L=6\Omega,$ $R_{GEN}=6\Omega, I_D=1\text{A}$		6		ns
$t_{D(off)}$	Turn-Off Delay Time			28		

Note 2. Short duration test pulse used to minimize self-heating effect.



● TYPICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ UNLESS NOTED)

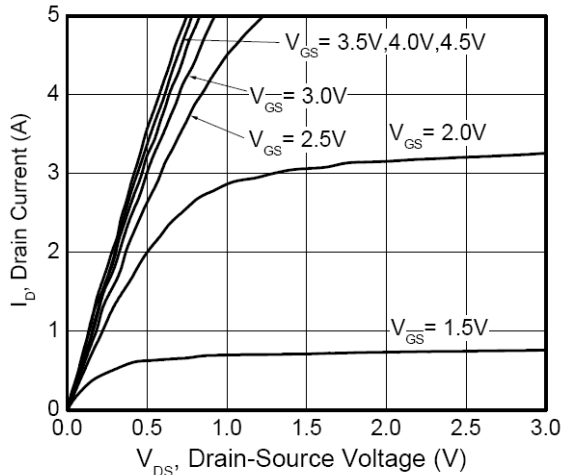


Figure 1. Output Characteristics

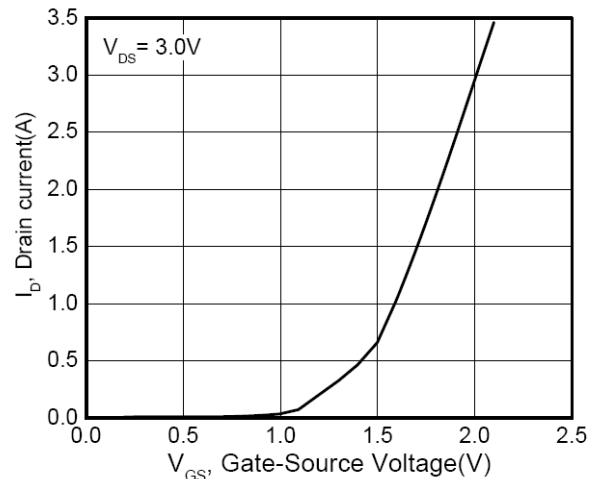


Figure 2. Transfer Characteristics

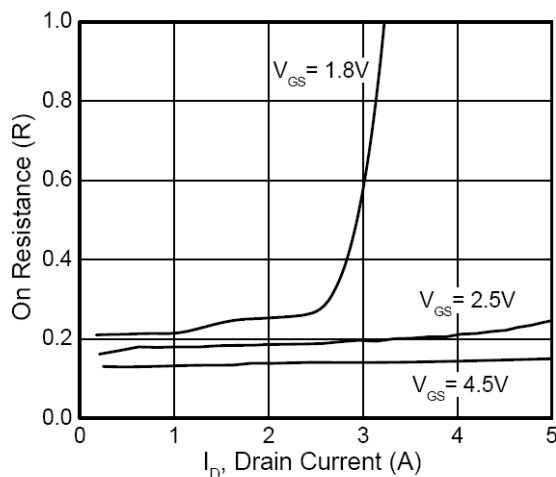


Figure 3. On-Resistance vs. Drain Current

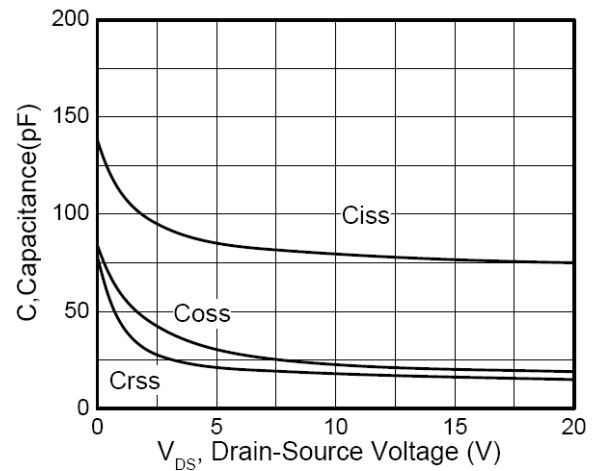


Figure 4. Capacitance

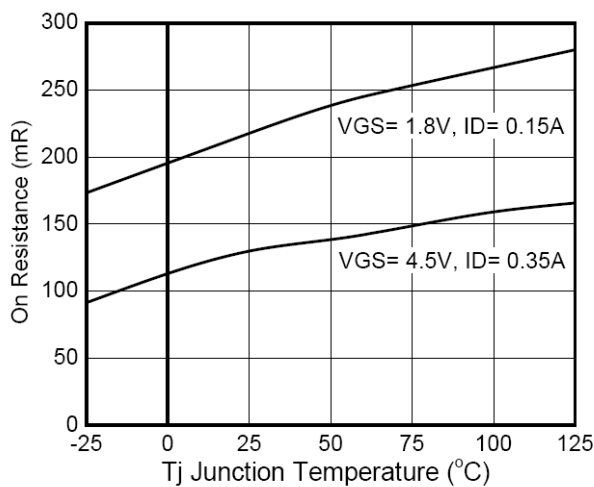


Figure 5. On-Resistance vs. Temperature

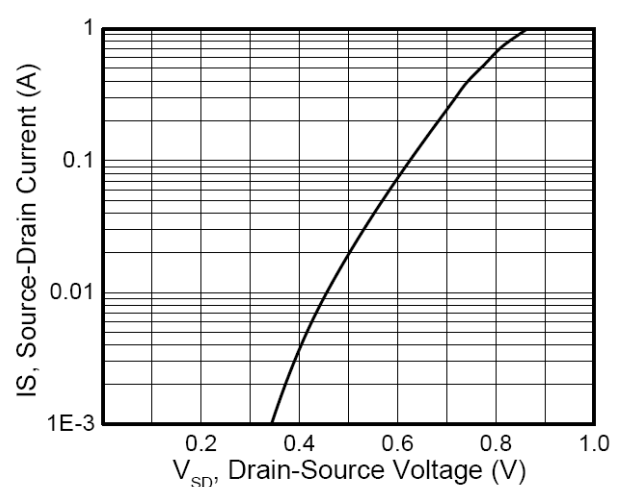


Figure 6. Diode Forward Characteristics



● **TYPICAL CHARACTERISTICS** ($T_A=25^\circ\text{C}$ UNLESS NOTED)

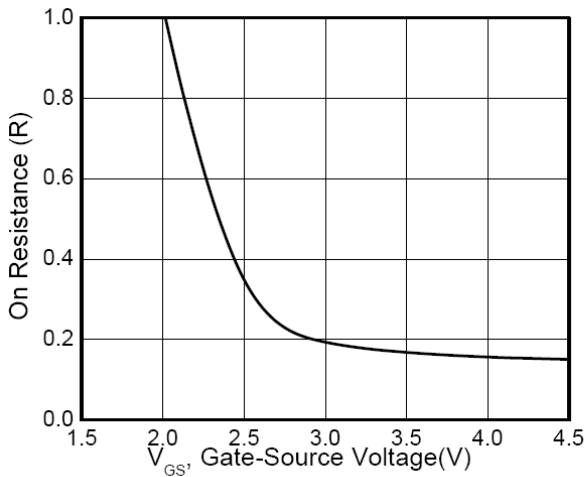


Figure 7. On Resistance vs. Gate-Source Voltage

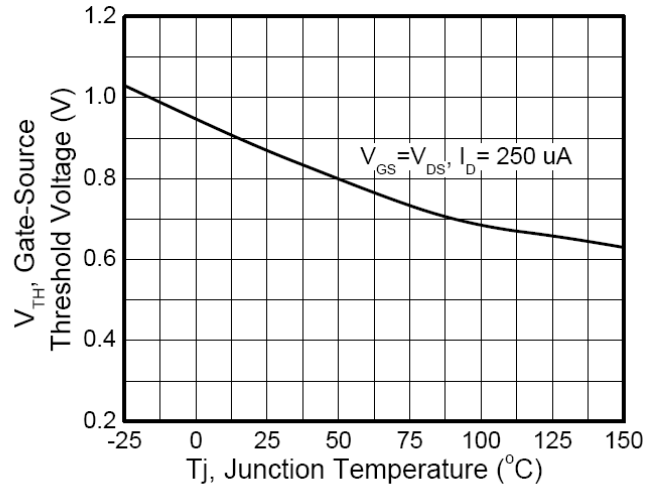


Figure 8. Gate Threshold vs. Temperature

● **Package Information**

