

/ Descriptions

SOP-8

MOS

Complementary Enhancement MOSFET in a SOP-8 Plastic Package.

/ Features

N-channel

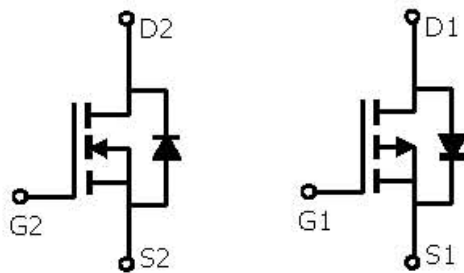
P-channel

 $V_{DS}(V)=60V$ $V_{DS}(V)=-60V$ $I_D=5.2A$ $I_D=-5.2A$ $R_{DS(ON)}<35m\Omega$ ($V_{GS}=10V$) $R_{DS(ON)}<35m\Omega$ ($V_{GS}=-10V$) $R_{DS(ON)}<40m\Omega$ ($V_{GS}=4.5V$) $R_{DS(ON)}<40m\Omega$ ($V_{GS}=-4.5V$)

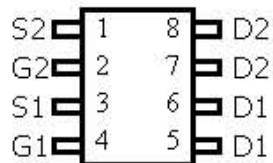
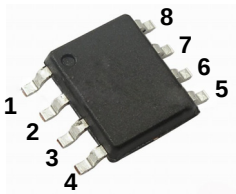
HF Product.

/ Applications

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies. And suitable for use as a load switch or in PWM applications.

/ Equivalent Circuit

channel: n-channel $V_{GS}=10V$ $V_{DS}=60V$

/ Pinning**/ h_{FE} Classifications & Marking**

See Marking Instructions.

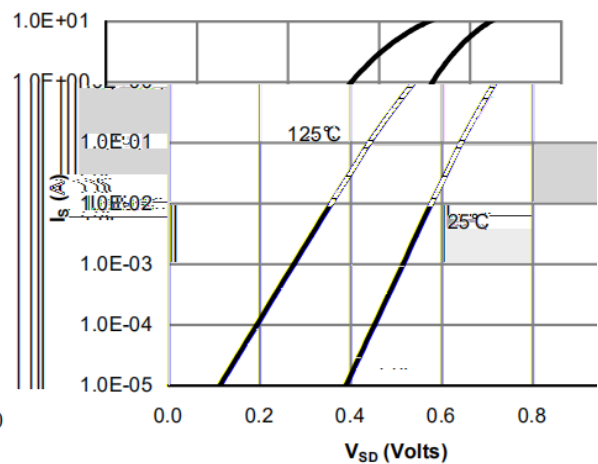
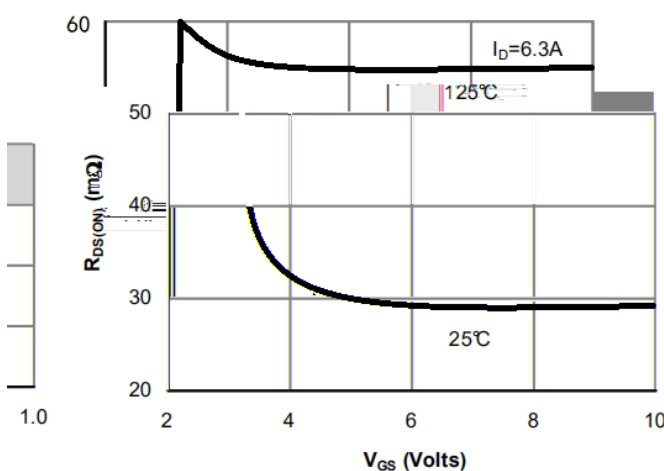
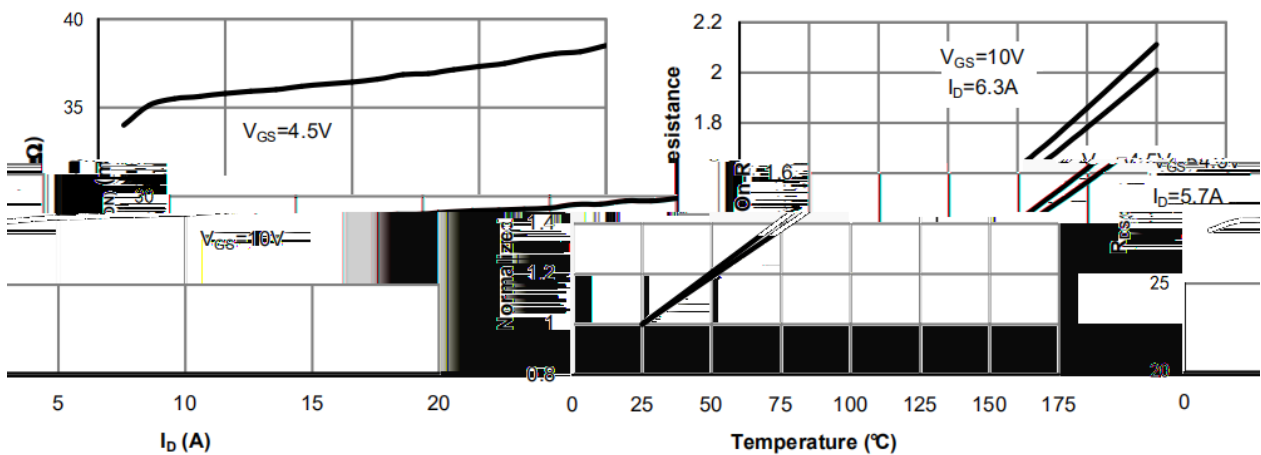
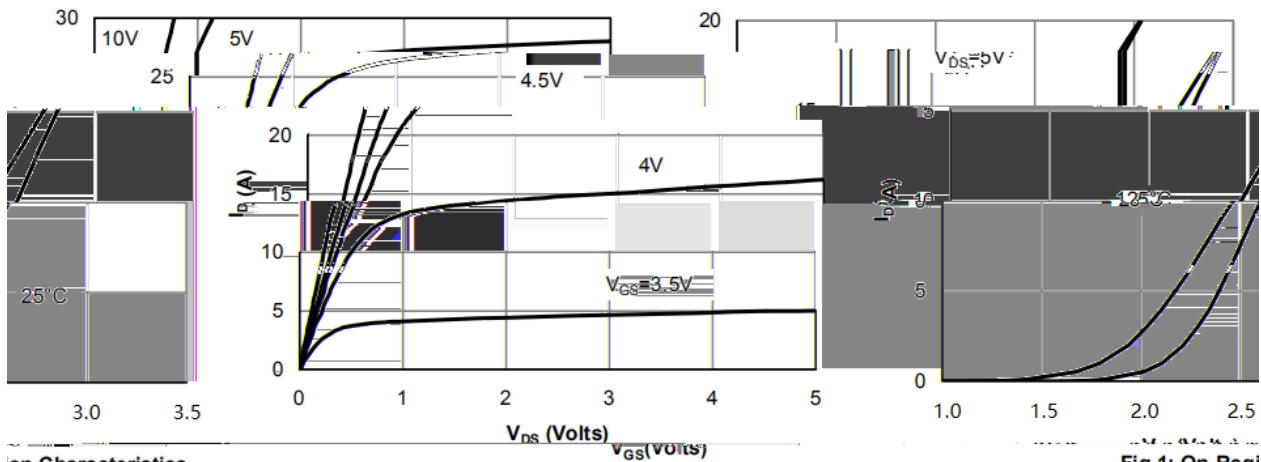
/ Absolute Maximum Ratings($T_A=25^\circ\text{C}$)

Parameter		Symbol	Rating		Unit
			N-channel	P-channel	
Drain-Source Voltage		V_{DSS}	60	-60	V
Gate-Source Voltage		V_{GSS}	± 20		V
Continuous Drain Current	$T_A=25^\circ\text{C}$	I_{D}	5.2	-5.2	A
	$T_A=70^\circ\text{C}$	I_{D}	4	-4	A
Pulsed Drain Current		I_{DM}	20.8	-20.8	A
Power Dissipation	$T_A=25$	P_{D}	2	2	W
	$T_A=70$	P_{D}	1.28	1.28	W
Maximum Junction-to-Ambient	$t \leq 10\text{s}$	R_{JA}	62.5	62.5	/W
	Steady-State	R_{JA}	110	110	/W
Maximum Junction-to-Lead	Steady-State	R_{JL}	40	40	/W
Junction and Storage Temperature Range		$T_{\text{J}}, T_{\text{STG}}$	-55 to +150		

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	60	65		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V$ $V_{GS}=0V$			1.0	μA
		$V_{DS}=60V$ $V_{GS}=0V$ $T_J=55^\circ C$			5.0	μA
Gate-Body leakage current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.5	3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=6.3A$		29.4	35	m Ω
		$V_{GS}=4.5V$ $I_D=5.7A$		30	40	m Ω
Forward Transconductance	g_{FS}	$V_{DS}=5.0V$ $I_D=6.3A$		13		S
Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1.0A$		0.73	1.0	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		1050		pF
Output Capacitance	C_{oss}			65		pF
Reverse Transfer Capacitance	C_{rss}			8		pF
Gate resistance	R_g	$V_{DS}=0V$ $V_{GS}=0V$ $f=1.0MHz$		45		
Total Gate Charge(10V)	Q_g	$V_{GS}=10V$ $V_{DS}=30V$ $I_D=6.3A$		47.62		nC
Total Gate Charge(4.5V)				24.2		nC
Gate-Source Charge	Q_{gs}			6		nC
Gate-Drain Charge	Q_{gd}			14.4		nC
Turn-On Delay Time	$t_{d(on)}$			7.6		ns

$V_{DS}=30V$ $V_{GS}=10V$
 $R_L=4.7\Omega$ $R_{GEN}=3\Omega$

N- / N-CHANNEL Electrical Characteristic Curve



N- / N-CHANNEL Electrical Characteristic Curve

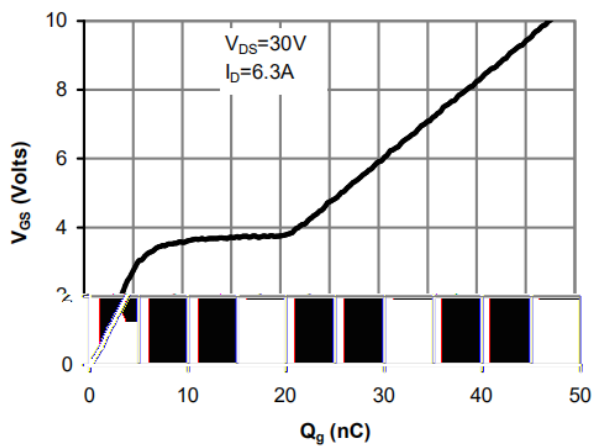


Figure 7: Gate-Charge Characteristics

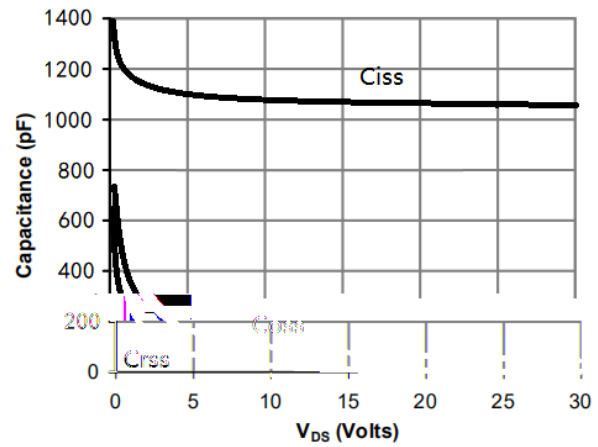


Figure 8: Capacitance Characteristics

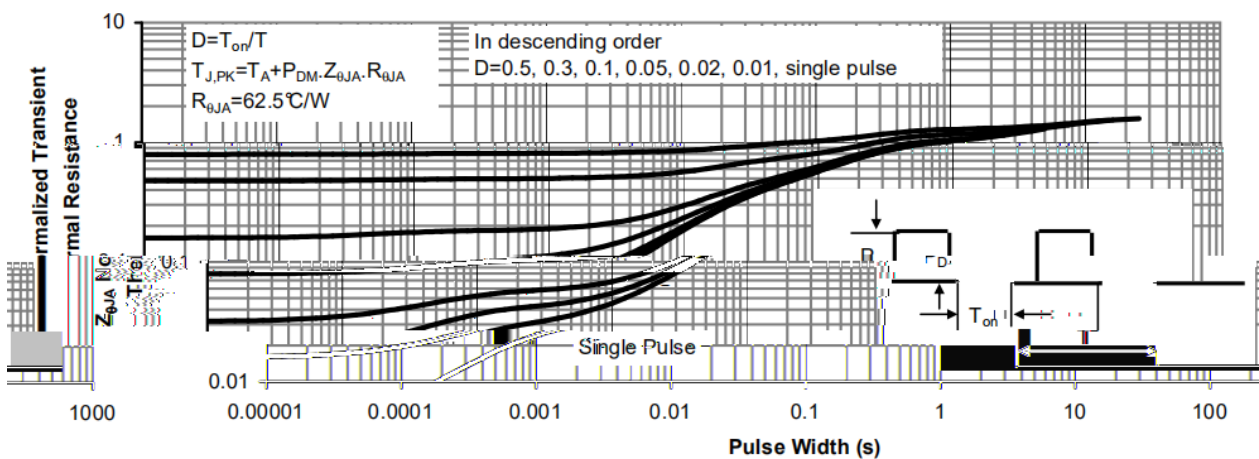
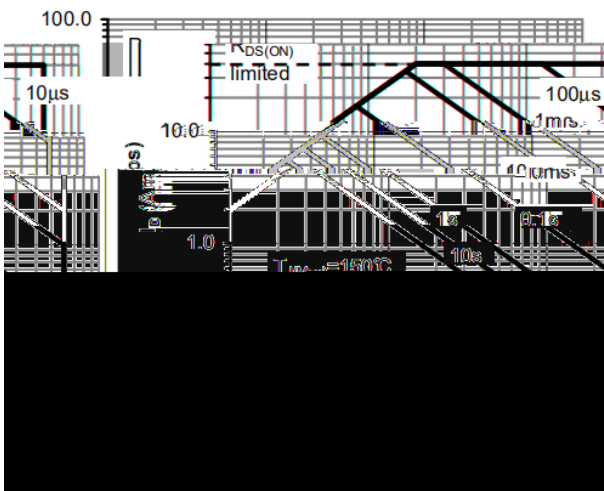


Figure 10: Normalized Maximum Transient Thermal Impedance

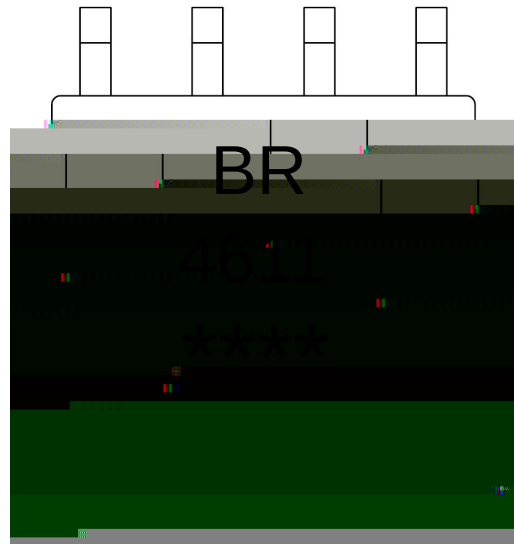
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=-250\mu A$	-60	-68		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V$ $V_{GS}=0V$			-1.0	μA
		$V_{DS}=-60V$ $V_{GS}=0V$ $T_J=55^\circ C$			-5.0	μA
Gate-Body leakage current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-1.0	-1.7	-3.0	V

Static Drain-0 Tw(GS(th))Tj10.5 0 0 10.-0.ent148 7()T6 626.0603 Tm-R.0001 Tc0.0727 Tw8036 0.460.4V

P- / P-CHANNEL Electrical Characteristic Curve

P-

/ Marking Instructions



BR

4611

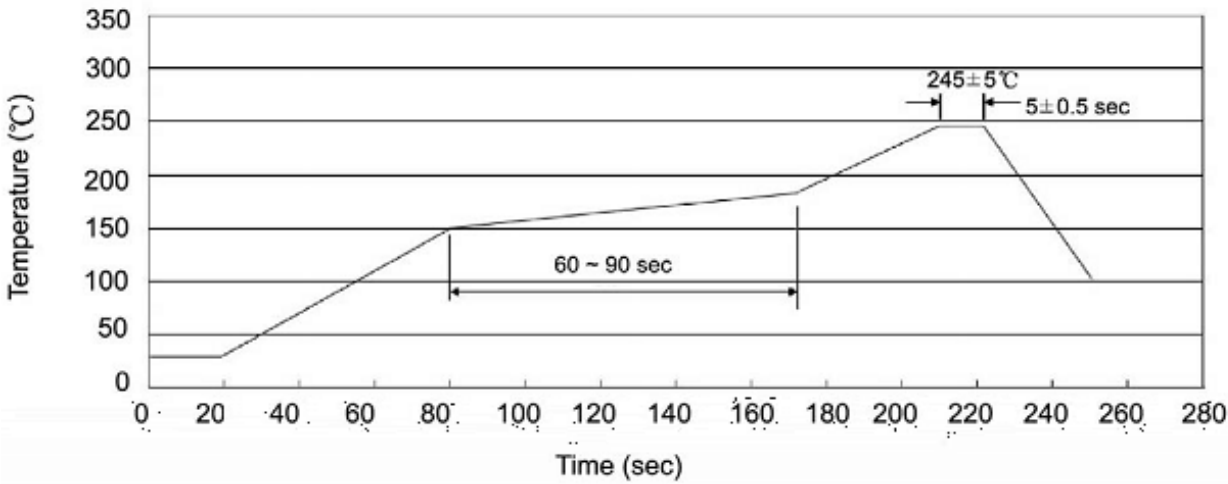
Note:

BR: Company Code.

4611: Product Type.

****: Lot No. Code, code change with Lot No.

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-----|-----|----|---------|---|
| 1 | 150 | 180 | 60 | 90sec; | 1.Preheating:150~180 , Time:60~90sec. |
| 2 | 245 | 5 | 5 | 0.5sec; | 2.Peak Temp.:245 5 , Duration:5 0.5sec. |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

260 5 10 1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOP/ESOP-8	4,000	2	8,000	6	48,000	13" ×12	360×360×50	380×335×366

/ Notices