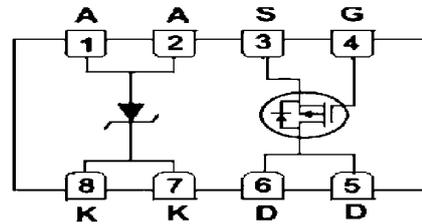
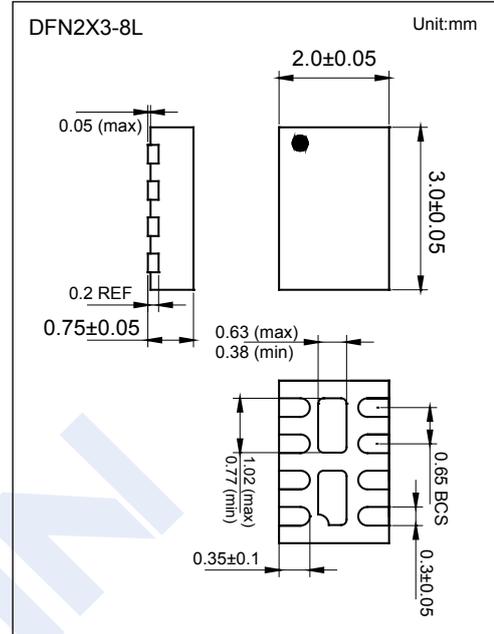
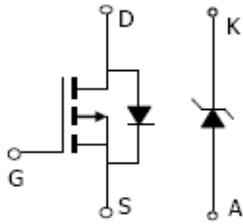


## P+Schottky Hybrid MOSFET

### SSF4703 (KSF4703)

#### ■ Features

- $V_{DS} = -20V$
- $I_D = -3.4 A$  ( $V_{GS} = -10V$ )
- $R_{DS(ON)} < 90m\Omega$  ( $V_{GS} = -4.5V$ )
- $R_{DS(ON)} < 120m\Omega$  ( $V_{GS} = -2.5V$ )
- $R_{DS(ON)} < 160m\Omega$  ( $V_{GS} = -1.8V$ )
- $V_R = 20V$ ,  $I_F = 1A$ ,  $V_F < 0.5V$  @  $0.5A$
- High Power and current handing capability



#### ■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	MOSFET	Schottky	Unit
Drain-Source Voltage	$V_{DS}$	-20	-	V
Gate-Source Voltage	$V_{GS}$	$\pm 8$	-	
Continuous Drain Current	$I_D$	-3.4	-	A
Pulsed Drain Current	$I_{DM}$	-15	-	
Schottky Reverse Voltage	$V_R$	-	20	V
Continuous Forward Current	$I_F$	-	1.9	A
Pulsed Forward Current	$I_{FM}$	-	7	
Power Dissipation	$P_D$	1.7	0.96	W
Thermal Resistance.Junction- to-Ambient	$R_{thJA}$	75	80	$^\circ C/W$
Junction Temperature	$T_J$	150		$^\circ C$
Junction Storage Temperature Range	$T_{stg}$	-55 to 150		

## P+Schottky Hybrid MOSFET

### SSF4703 (KSF4703)

#### ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =-250 μ A, V <sub>GS</sub> =0V	-20			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-16V, V <sub>GS</sub> =0V			-1	μA
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±8V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA	-0.45		-1	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-3.4A			90	mΩ
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-2.5A			120	
		V <sub>GS</sub> =-1.8V, I <sub>D</sub> =-1.5A			160	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-3.4A	4	7		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-10V, f=1MHz		540		pF
Output Capacitance	C <sub>oss</sub>			70		
Reverse Transfer Capacitance	C <sub>rss</sub>			50		
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-3.4V, I <sub>D</sub> =-4.5A		6.1		nC
Gate Source Charge	Q <sub>gs</sub>			0.6		
Gate Drain Charge	Q <sub>gd</sub>			1.6		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>DD</sub> =-10V, I <sub>D</sub> =-3.4A V <sub>GS</sub> =-4.5V, R <sub>GEN</sub> =3Ω		10		ns
Turn-On Rise Time	t <sub>r</sub>			12		
Turn-Off DelayTime	t <sub>d(off)</sub>			44		
Turn-Off Fall Time	t <sub>f</sub>			22		
Forward Voltage Drop	V <sub>F</sub>	I <sub>F</sub> =0.5A			0.5	V
Maximum Reverse Leakage Current	I <sub>rrm</sub>	V <sub>R</sub> =16V			0.1	mA
Junction Capacitance	C <sub>T</sub>	V <sub>R</sub> =10V		34		pF
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =-1A, di/dt=100A/us		5.2	10	ns
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>				0.8	
Maximum Body-Diode Continuous Current	I <sub>S</sub>				-2	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A, V <sub>GS</sub> =0V			-1	V

Note :Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

#### ■ Marking

Marking	4703
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## P+Schottky Hybrid MOSFET SSF4703 (KSF4703)

■ Typical Characteristics

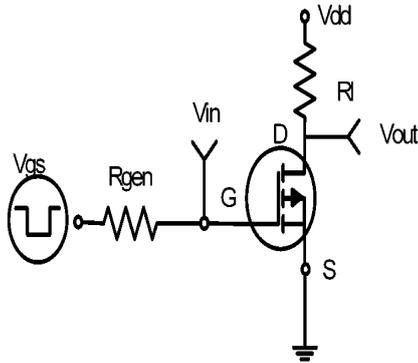


Figure 1: Switching Test Circuit

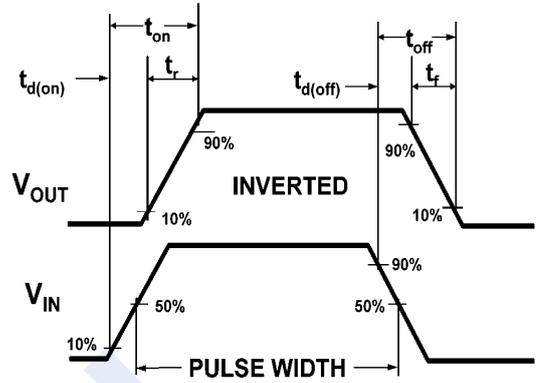
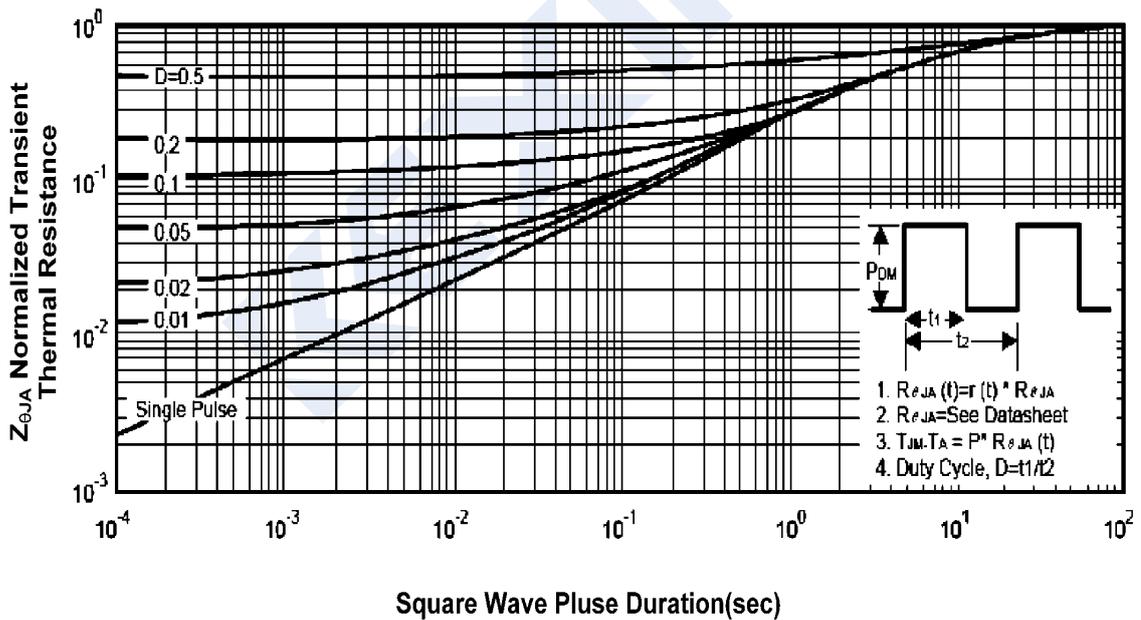


Figure 2: Switching Waveforms



Square Wave Pulse Duration(sec)  
Figure 3: Normalized Maximum Transient Thermal Impedanc