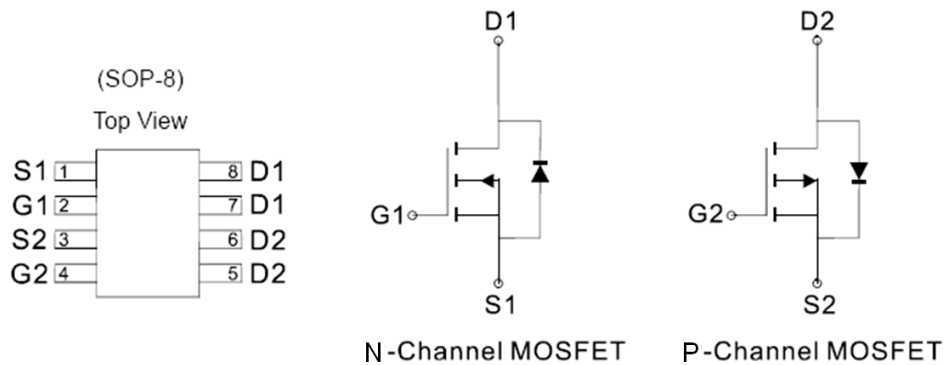


40V N & P Enhancement Mode Field Effect Transistor

PRODUCT SUMMARY			
FS5505	V(BR)DSS	RDS(ON)	ID
N-Channel	40	16mΩ	7.2A
P-Channel	-40	30mΩ	-6.5A

The FS5505 combines advanced trench MOSFET technology with a low resistance package to provide extremely low RDS(ON). this device is well suited for high current load applications.

Pin Configurations



Absolute Maximum Ratings @ $T_A=25^\circ\text{C}$ unless otherwise noted

PARAMETERS/TEST CONDITIONS	SYMBOL	N-Channel	P-Channel	UNITS
Drain-Source Voltage	VDS	40	-40	V
Gate-Source Voltage	VGS	±20	±20	V
Single Pulse Avalanche Energy	EAS	28	66	mJ
Avalanche Current	IAS	17.8	-27.2	A
Continuous Drain Current	ID	TC = 25 °C	7.2	-6.5
		TC = 100 °C	5.6	-5.1
Pulsed Drain Current ¹	IDM	14.5	-13	A
Power Dissipation	PD	TC = 25 °C	2	W
		TC = 70 °C	1.3	
Junction & Storage Temperature Range	T _j , T _{stg}	-55 to 150		°C
Lead Temperature (1/16" from case for 10 sec.)	TL	275		

Note :

- The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- The data tested by pulsed , pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$
- The EAS data shows Max. rating . The test condition is VDD=25V,VGS=10V,L=0.1mH,IAS=17.8A

FS5505

● **Electrical Characteristics** @ $T_A=25^{\circ}\text{C}$ unless otherwise noted

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT		
			MIN	TYP	MAX			
STATIC								
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	N-Ch P-Ch	40 -40			V	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	N-Ch P-Ch	1.0 -1.0	1.5 -1.6	2.5 -2.5		
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$	N-Ch P-Ch			± 100 ± 100	nA	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 32V, V_{GS} = 0V$	N-Ch			1	μA	
		$V_{DS} = -32V, V_{GS} = 0V$	P-Ch			-1		
		$V_{DS} = 32V, V_{GS} = 0V, T_J = 55^{\circ}\text{C}$	N-Ch					5
		$V_{DS} = -32V, V_{GS} = 0V, T_J = 55^{\circ}\text{C}$	P-Ch					-5
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 4A$	N-Ch			21	m Ω	
		$V_{GS} = -4.5V, I_D = -4A$	P-Ch			48		
		$V_{GS} = 10V, I_D = 6A$	N-Ch					16
		$V_{GS} = -10V, I_D = -6A$	P-Ch					30
Forward Transconductance ₁	g_{fs}	$V_{DS} = 5V, I_D = 12A$	N-Ch			14	S	
		$V_{DS} = -5V, I_D = -6A$	P-Ch			12		

DYNAMIC							
Input Capacitance	C_{iss}	N-Channel $V_{GS} = 0V, V_{DS} = 15V, f = 1\text{MHz}$	N-Ch P-Ch		593 980		pF
Output Capacitance	C_{oss}		N-Ch P-Ch		76 105		
Reverse Transfer Capacitance	C_{rss}	P-Channel $V_{GS} = 0V, V_{DS} = -15V, f = 1\text{MHz}$	N-Ch P-Ch		56 80		
Total Gate Charge ₂	Q_g	N-Channel $V_{DS}=20V, V_{GS}=4.5V, I_D=6A$ P-Channel $V_{DS}=-20V, V_{GS}=-4.5V, I_D=-6A$	N-Ch P-Ch		5.5 9		nC
Gate-Source Charge ₂	Q_{gs}		N-Ch P-Ch		1.25 2.54		
Gate-Drain Charge ₂	Q_{gd}		N-Ch P-Ch		2.5 3.1		

FS5505

Turn-On Delay Time ²	td(on)	N-Channel VDD = 30V ID ≅ 1A, VGS = 10V, RGEN = 6Ω	N-Ch		11	20	nS
			P-Ch		7	14	
Rise Time ²	tr		N-Ch		8	18	
			P-Ch		10	20	
Turn-Off Delay Time ²	td(off)	P-Channel VDD = -30V ID ≅ -1A, VGS = -10V, RGEN = 6Ω	N-Ch		19	35	
			P-Ch		19	34	
Fall Time ²	tf		N-Ch		6	15	
			P-Ch		12	22	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (TC = 25 °C)							
Continuous Current	Is		N-Ch			1.3	A
			P-Ch			-1.3	
Pulsed Current ³	ISM		N-Ch			2.6	
			P-Ch			-2.6	
Forward Voltage ¹	VSD	IF = Is A, VGS = 0V	N-Ch			1	V
		IF = Is A, VGS = 0V	P-Ch			-1	

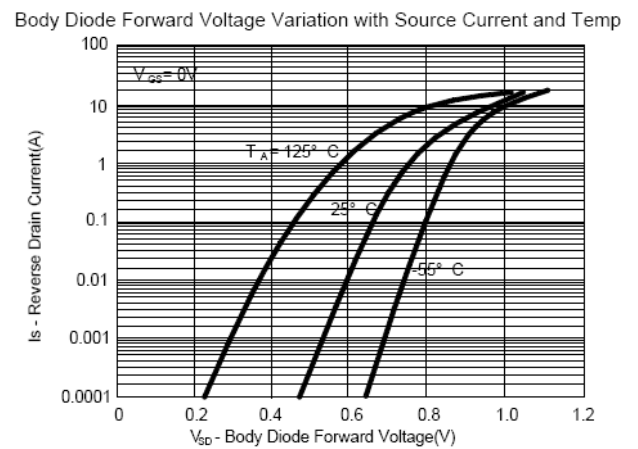
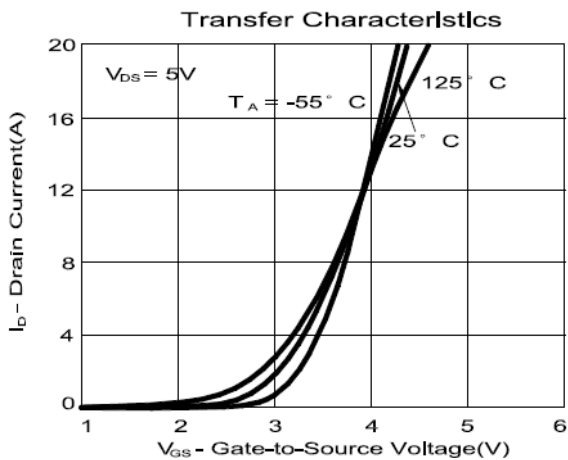
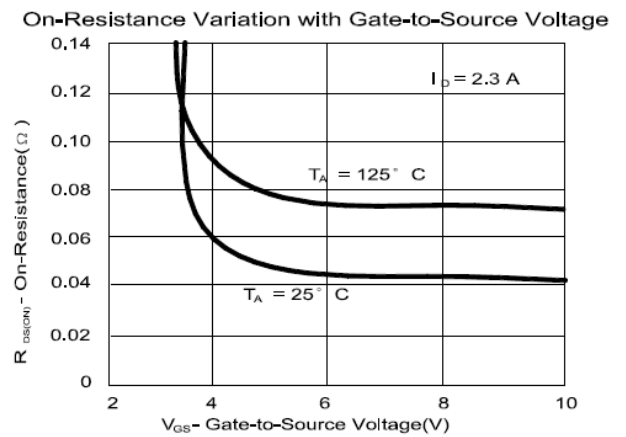
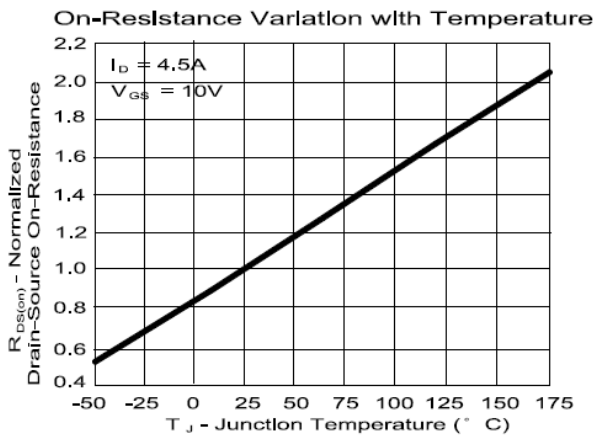
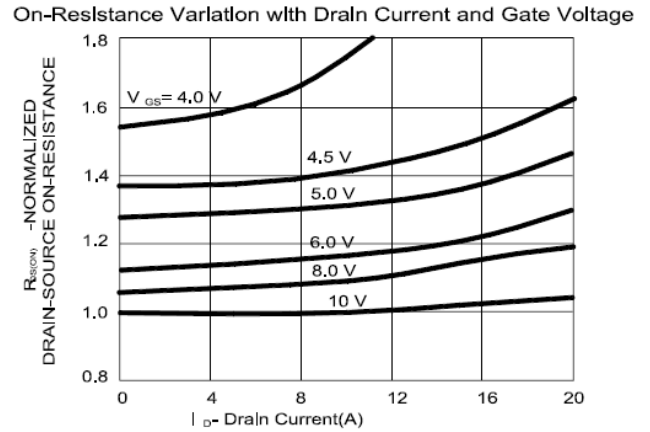
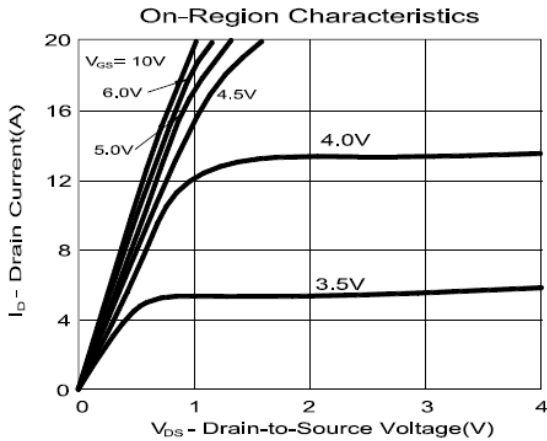
Note :

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width ≅ 300us , duty cycle ≅ 2%
- 3.The EAS data shows Max. rating . The test condition is VDD=25V,VGS=10V,L=0.1mH,IAS=17.8A
- 4.The power dissipation is limited by 150°C junction temperature
- 5.The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation.

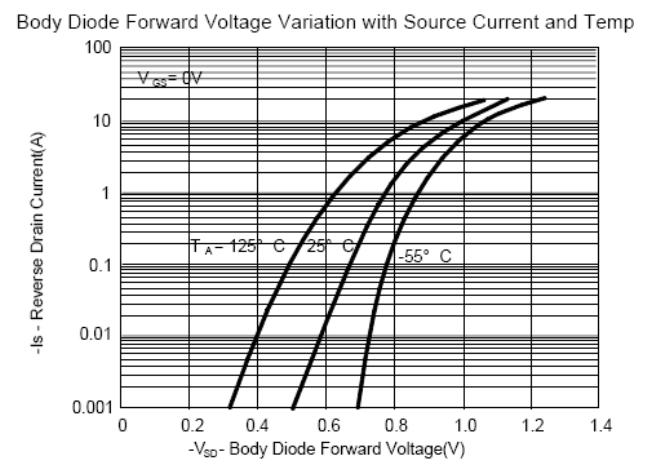
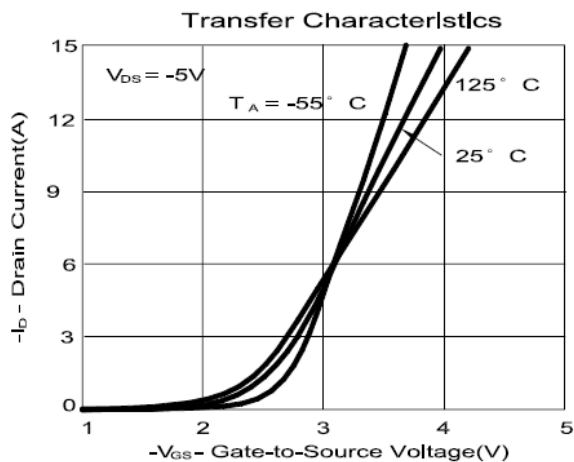
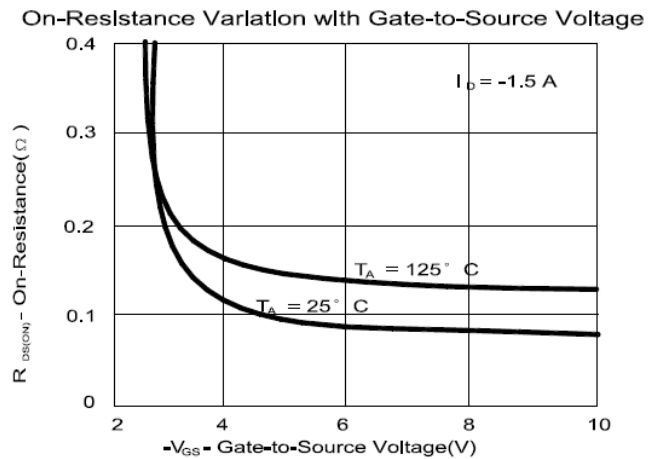
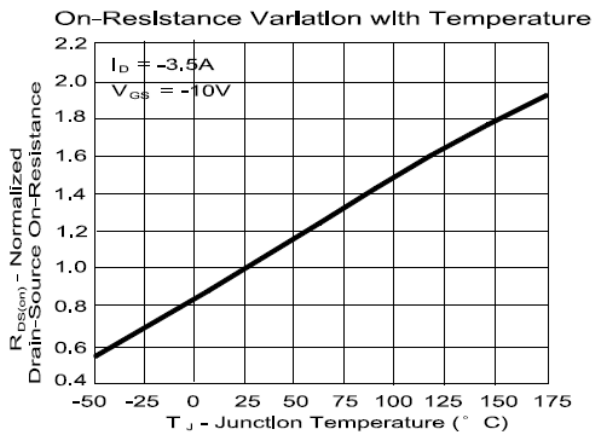
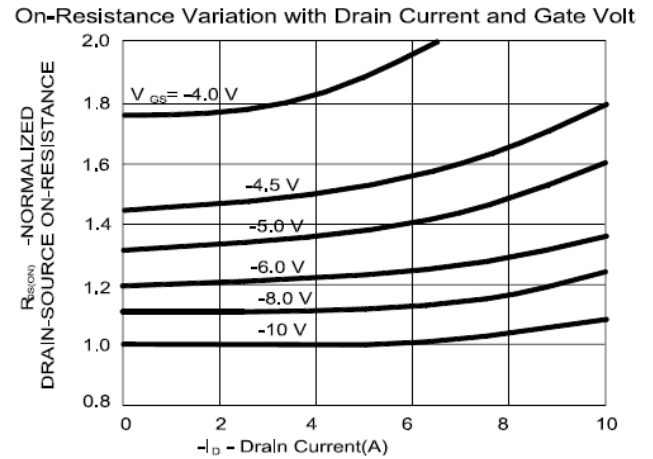
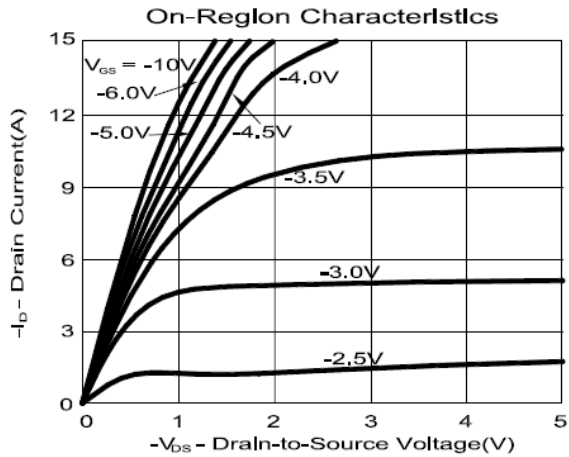
FS5505

● Typical Performance Characteristics (T_J = 25 Noted)

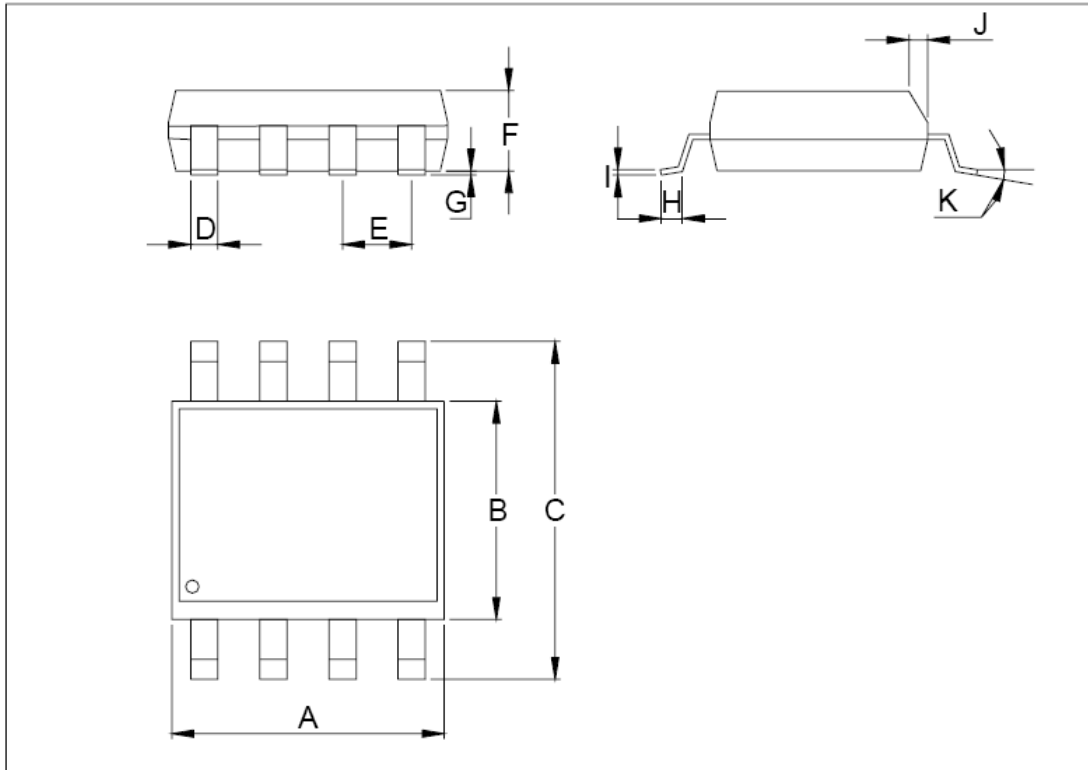
N-CHANNEL



P-CHANNEL



SOP8 MECHANICAL DATA



Dimension	mm			Dimension	mm		
	Min	Typ	Max		Min	Typ	Max
A	4.8	4.9	5.0	H	0.5	0.715	0.83
B	3.8	3.9	4.0	I	0.18	0.254	0.25
C	5.8	6.0	6.2	J		0.22	
D	0.38	0.445	0.51	K	0°	4°	8°
E		1.27		L			
F	1.35	1.55	1.75	M			
G	0.1	0.175	0.25	N			