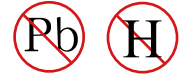




YEA SHIN TECHNOLOGY CO., LTD

YS3139KUC

P-Channel Enhancement MOSFET



V_{DS}= -20V, I_D= -0.35A

FEATURES

- 20V/ -350mA
- $R_{DS(ON)} \leq 0.9\Omega @ V_{GS} = -4.5V$
- $R_{DS(ON)} \leq 1.4\Omega @ V_{GS} = -2.5V$
- $R_{DS(ON)} \leq 2.7\Omega @ V_{GS} = -1.8V$
- Reliable and Rugged
- Green Device Available
- ESD Protection

APPLICATION

- Interfacing
- Switching

MARKING

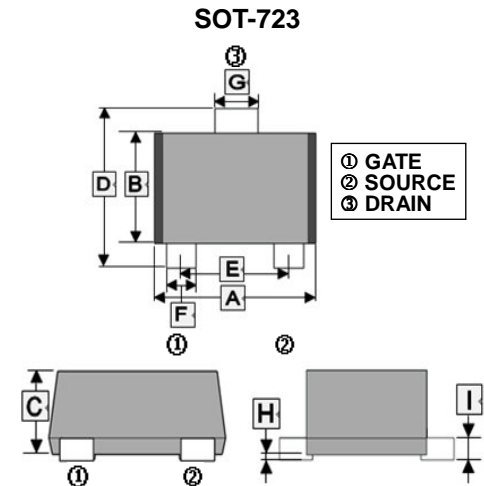
KD

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-723	8K	7 inch

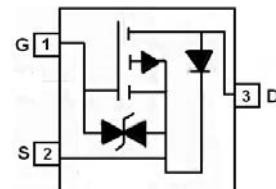
ORDER INFORMATION

Part Number	Type
YS3139KUC	Lead (Pb)-free and Halogen-free



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.150	1.250	F	0.150	0.270
B	0.750	0.850	G	0.250	0.370
C	-	0.550	H	0	0.050
D	1.150	1.250	I	-	0.170
E	0.800TYP.				

Top View



MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V _{DS}	-20	V
Gate-Source Voltage	V _{GS}	±12	V
Continuous Drain Current @ V _{GS} = -4.5V ¹	I _D	T _A =25°C	-0.35
		T _A =85°C	-0.25
Pulsed Drain Current ²	I _{DM}	-1.4	A
Total Power Dissipation	P _D	150	mW
Operating Junction & Storage Temperature Range	T _J , T _{STG}	150, -55~150	°C
Thermal Resistance Ratings			
Thermal Resistance Junction-ambient ¹	R _{θJA}	833	°C/W

YS3139KUC

ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	V _{(BR)DSS}	-20	-	-	V	V _{GS} =0V, I _D = -250μA
Zero Gate Voltage Drain Current	I _{DSS}	-	-	-1	μA	V _{DS} = -20V, V _{GS} =0, T _J =25°C
		-	-	-10	uA	V _{DS} = -20V, V _{GS} =0, T _J =55°C
Gate-Body Leakage Current	I _{GSS}	-	-	±10	μA	V _{DS} =0V, V _{GS} =±12V
Gate Threshold Voltage	V _{GS(th)}	-0.5	-	-1.5	V	V _{DS} =V _{GS} , I _D = -250μA
Drain-Source On-Resistance ³	R _{DS(ON)}	-	-	0.9	Ω	V _{GS} = -4.5V, I _D = -350mA
		-	-	1.4		V _{GS} = -2.5V, I _D = -300mA
		-	-	2.7		V _{GS} = -1.8V, I _D = -150mA
Total Gate Charge	Q _g	-	1.5	-	nC	I _{DS} = -250mA, V _{DS} = -10V, V _{GS} = -4.5V
Gate-Source Charge	Q _{gs}	-	0.28	-		
Gate-Drain ("Miller") Change	Q _{gd}	-	0.44	-		
Turn-On Delay Time	T _{d(on)}	-	5	-	nS	V _{DD} = -10V, I _{DS} = -200mA, V _{GS} = -4.5V, R _{GEN} =10Ω
Rise Time	T _r	-	6	-		
Turn-Off Delay Time	T _{d(off)}	-	42	-		
Fall Time	T _f	-	14	-		
Input Capacitance	C _{iSS}	-	59	-	pF	V _{DS} = -10V, V _{GS} =0V, f=1MHz
Output Capacitance	C _{oss}	-	21	-		
Reverse Transfer Capacitance	C _{rSS}	-	15	-		
Source-Drain Diode						
Continuous Source Current ¹	I _S			-0.35	A	
Pulsed Source Current ²	I _{SM}			-1.4	A	
Diode Forward Voltage ³	V _{SD}	-	-	-1.2	V	I _S = -150mA, V _{GS} =0V

Notes:

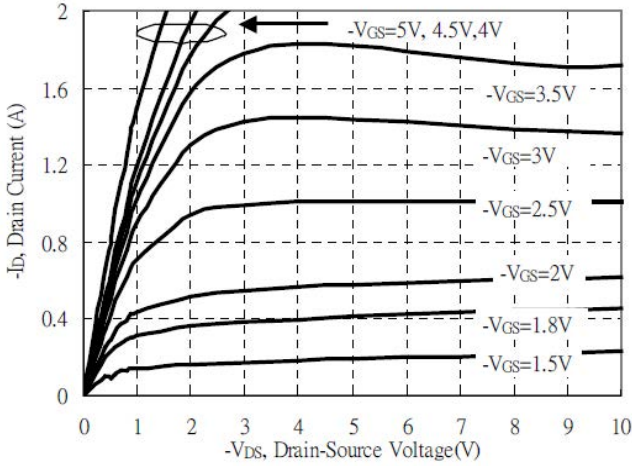
1. Surface mounted on FR4 Board using the minimum recommended pad size
2. Pulse width limited by maximum junction temperature., Pw ≤ 10μs, Duty cycle ≤ 2%
3. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%

DEVICE CHARACTERISTICS

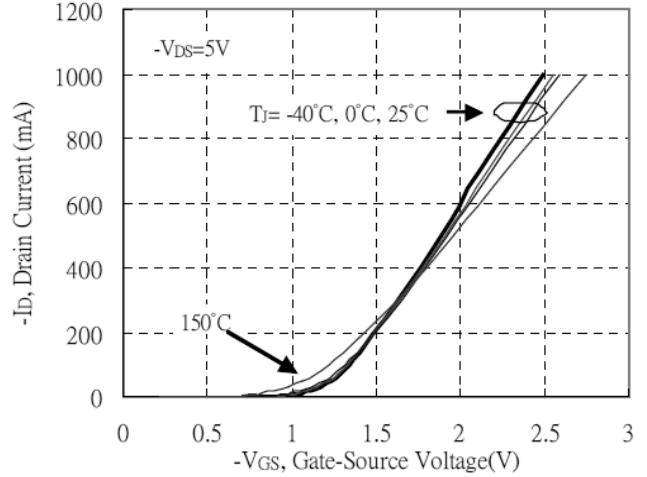
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CHARACTERISTICS CURVES

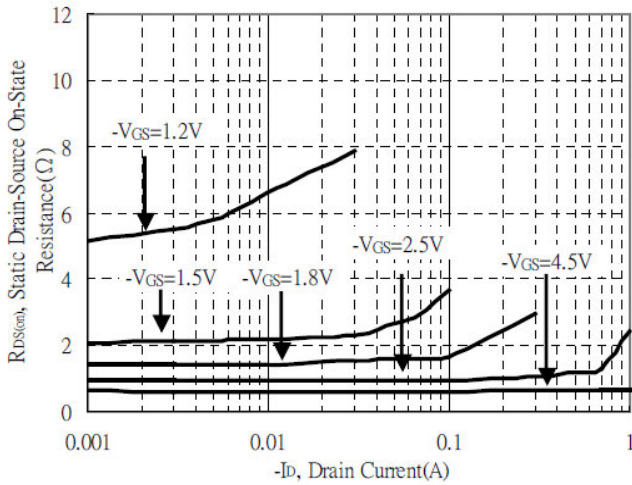
Typical Output Characteristics



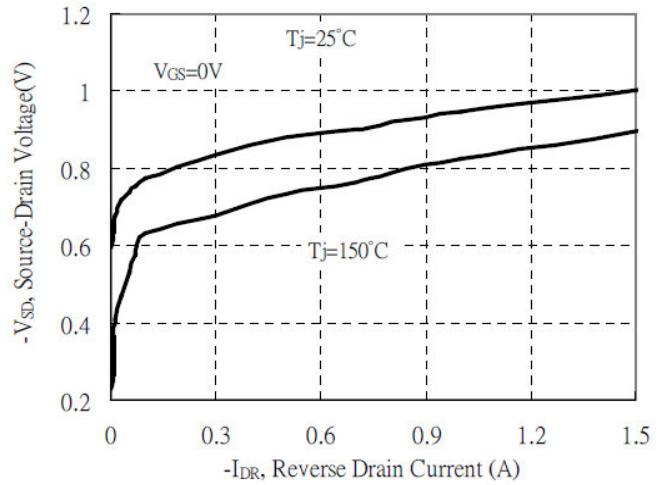
Typical Transfer Characteristics



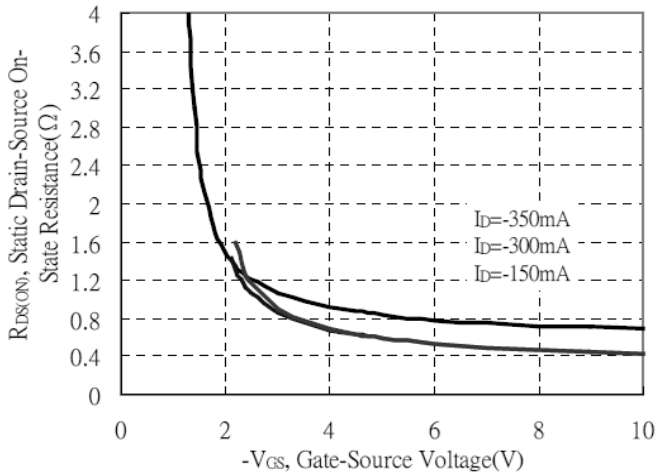
Static Drain-Source On-State resistance vs Drain Current



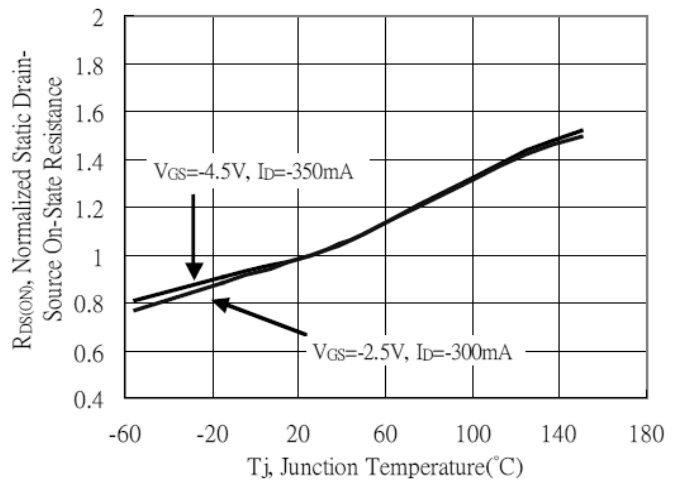
Reverse Drain Current vs Source-Drain Voltage



Static Drain-Source On-State Resistance vs Gate-Source Voltage



Drain-Source On-State Resistance vs Junction Temperature

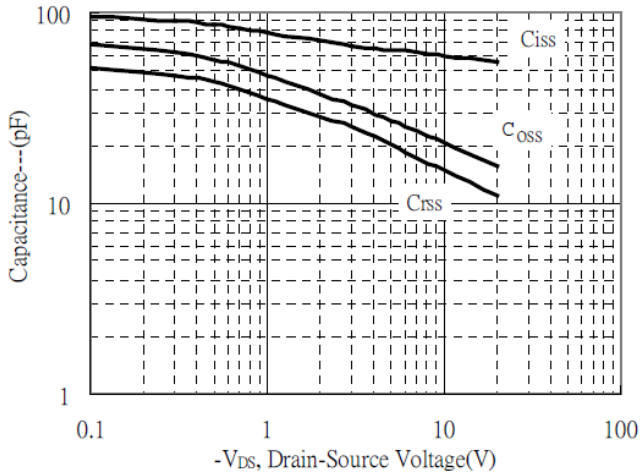


DEVICE CHARACTERISTICS

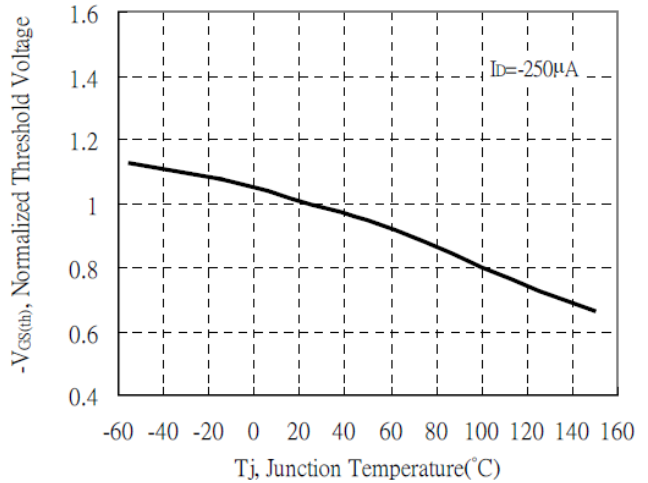
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CHARACTERISTICS CURVES

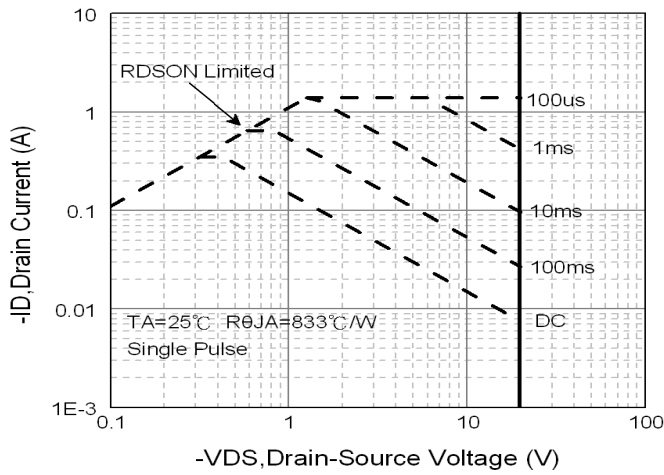
Capacitance vs Drain-to-Source Voltage



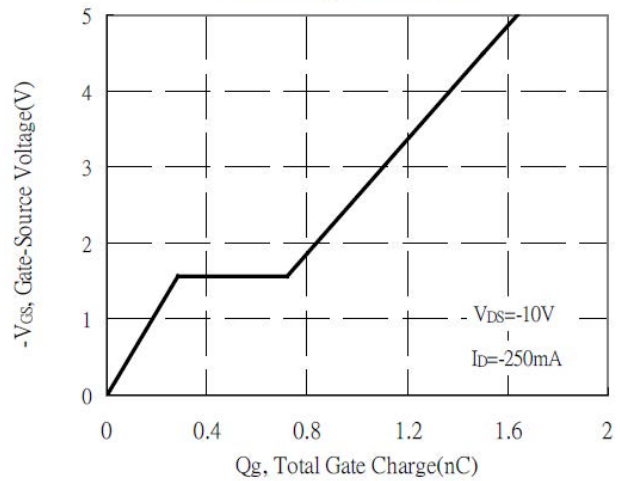
Threshold Voltage vs Junction Temperature



Maximum Safe Operating Area



Gate Charge Characteristics



Transient Thermal Response Curves

