

-20V Dual P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

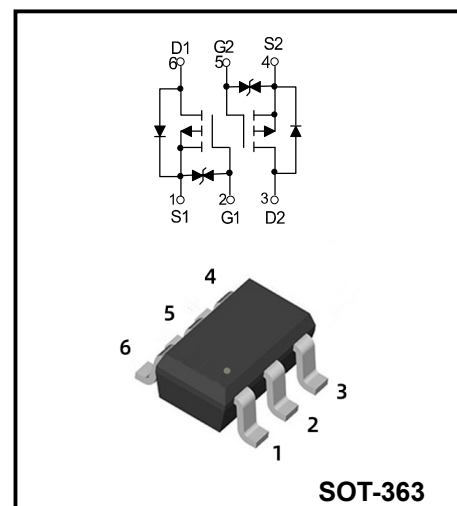
I_D	-0.66A
V_{DSS}	-20V
R_{DS(on)}-typ(@V_{GS}=-4.5V)	<520mΩ(Typ:430mΩ)
R_{DS(on)}-typ(@V_{GS}=-2.5V)	<700mΩ(Typ:624mΩ)
R_{DS(on)}-typ(@V_{GS}=-1.8V)	<950mΩ

Features

- ♦High-Side Switching
- ♦Low On-Resistance
- ♦Low Threshold
- ♦Fast Switching Speed

Mechanical Data

- ♦SOT-363 Small Outline Plastic Package.
- ♦Epoxy UL: 94V-0.
- ♦Mounting Position: Any.



Marking Code	
YFW3139KDW	39K

Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	-20	V
Gate - Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous	I_D(DC)	-0.66	A
Drain Current-Pulsed(Note1)	I_{DM}(pulse)	-2.64	A
Power Dissipation(Note2)	P_D	150	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55 to +150	°C
Thermal Resistance from Junction to Ambient	R_{θJA}	833	°C/W

Maximum Ratings at Tc=25°C unless otherwise specified

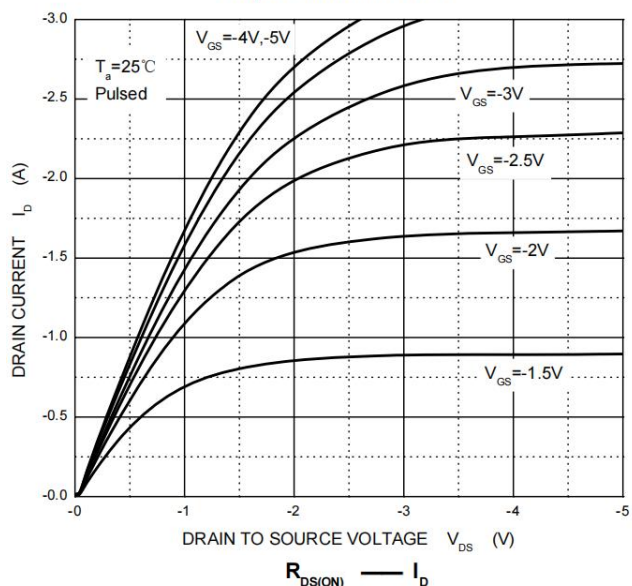
Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = -250\mu A$	$V_{(BR)DSS}$	-20			V
Gate-Threshold Voltage(note 3)	$V_{DS} = V_{GS}, I_D = -250\mu A$	$V_{GS(th)}$	-0.35	-0.45	-1.1	
Gate-Body Leakage Current	$V_{DS} = 0V, V_{GS} = \pm 10V$	I_{GSS}			± 20	μA
Zero Gate Voltage Drain Current	$V_{DS} = -20V, V_{GS} = 0V$	I_{DSS}			-1	μA
Drain-Source On-State Resistance(note 3)	$V_{GS} = -4.5V, I_D = -1A$	$R_{DS(on)}$		430	520	m Ω
	$V_{GS} = -2.5V, I_D = -800mA$			624	700	
	$V_{GS} = -1.8V, I_D = -500mA$			950		
Forward Transconductance	$V_{DS} = -10V, I_D = -540mA$	g_{FS}	0.8			S
Input Capacitance	$V_{DS} = -16V, V_{GS} = 0V, f = 1MHz$	C_{iss}			170	pF
Output Capacitance		C_{oss}			25	
Reverse Transfer Capacitance		C_{rss}			15	
Turn-On Delay Time	$V_{DD} = -10V$ $I_D = -200mA$ $V_{GS} = -4.5V, R_G = 10\Omega$	$t_{d(on)}$		9		ns
Rise Time		t_r		5.8		
Turn-Off Delay Time		$t_{d(off)}$		32.7		
Fall Time		t_f		20.3		
Drain-Source Diode Forward Voltage (note 3)	$I_S = -0.5A, V_{GS} = 0V$	V_{SD}			-1.2	V

Note:

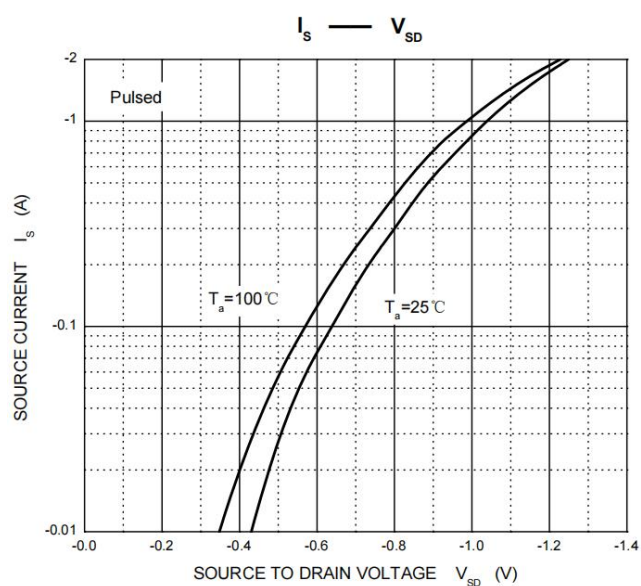
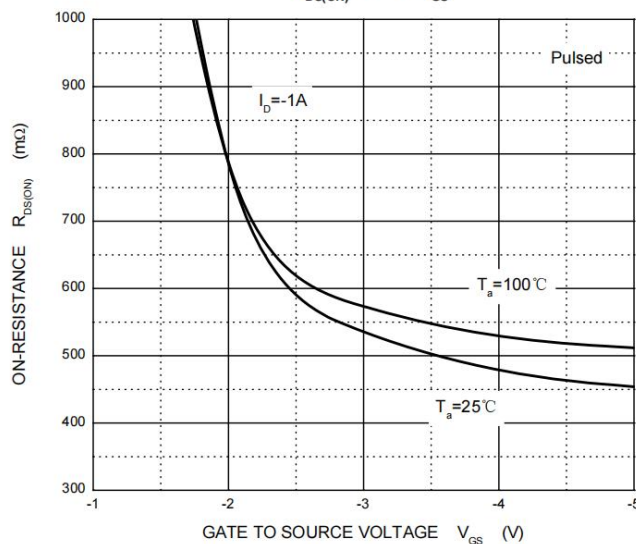
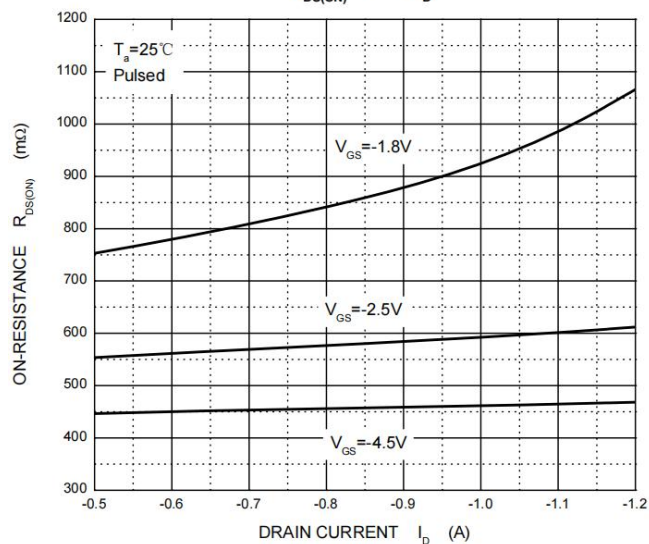
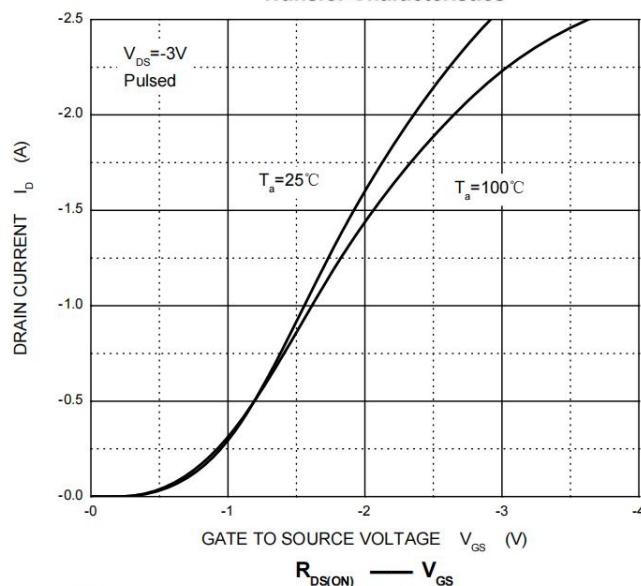
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at Ta=25°C.
3. Pulse Test: Pulse Width≤300us, Duty Cycle≤0.5%.
4. These parameters have no way to verify.

Typical characteristics

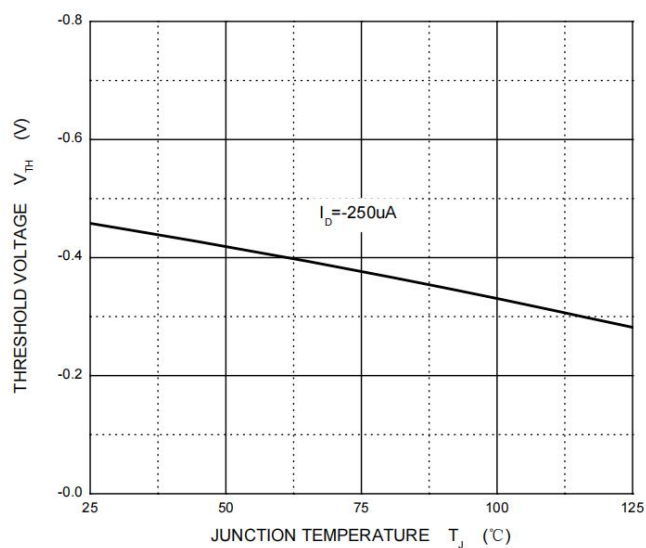
Output Characteristics



Transfer Characteristics



Threshold Voltage



Ordering information

Package	Packing Description	Packing Quantity
SOT-363	Tape/Reel, 7" reel	3000PCS/Reel 120000PCS/Carton

Package Dimensions

SOT-363

Dim.	Millimeter(mm)		mil	
	Min.	Max.	Min.	Max.
A	0.8	1.1	32	43
A1	-	0.1	-	3.94
bp	0.20	0.30	7.87	11.81
c	0.10	0.25	3.94	9.84
D	1.8	2.2	70.87	86.61
E	1.15	1.35	45.28	53.15
e	1.3		51.18	
e1	0.65		25.6	
HE	2.0	2.2	78.74	86.6
Lp	0.15	0.45	5.90	17.71
Q	0.15	0.25	5.90	9.84
v	0.2		7.78	
w	0.2		7.78	
y	0.1		3.94	

The recommended mounting pad size

