

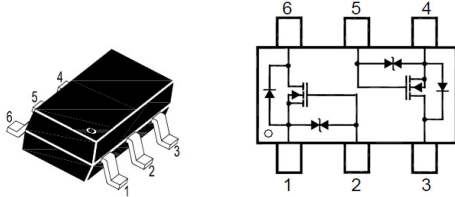


SM3018KDW H

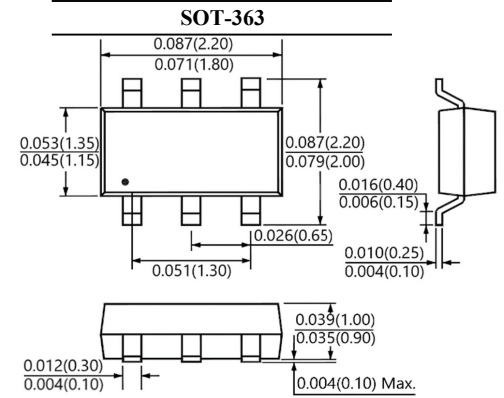
Dual N-Channel Enhancement Mode Field Effect Transistor

FEATURES

- Fast Switching Speed
- ESD protected gate >2kV (HBM)
- Suffix "H" indicates Halogen-free parts, ex. SM3018KH



1.Source 2.Gate 3.Drain
4.Source 5.Gate 6.Drain



Dimensions in inch and (millimeter)

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	100	mA
Pulsed Drain Current (Note 1)	I_{DM}	800	mA
Power Dissipation	P_D	150	mW
Thermal Resistance, Junction to Ambient (Note 2)	$R_{\theta JA}$	833	$^\circ\text{C} / \text{W}$
Operating and Storage Temperature Range	T_J, T_{sig}	- 55 to + 150	$^\circ\text{C}$

Note:

1. Pulse width $\leq 100\mu\text{s}$, Duty cycle $\leq 2\%$, Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)} = 150^\circ\text{C}$
2. Device mounted on FR-4 substrate PC board, with minimum recommended pad layout



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Electrical Characteristics ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified)

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Static						
Drain Source Breakdown Voltage	$I_D = 10\mu\text{A}$	BV_{DSS}	30	-	-	V
Zero Gate Voltage Drain Current	$V_{DS} = 30\text{V}$	I_{DSS}	-	-	1	μA
Gate Source Leakage Current	$V_{GS} = \pm 20\text{V}$	I_{GSS}	-	-	± 1	μA
Gate Threshold Voltage	$V_{DS} = 3\text{V}, I_D = 100\mu\text{A}$	$V_{GS(th)}$	0.8	-	1.5	V
Static Drain Source On-Resistance	$V_{GS} = 4\text{V}, I_D = 10\text{mA}$	$R_{DS(on)}$	-	-	8	Ω
	$V_{GS} = 2.5\text{V}, I_D = 1\text{mA}$		-	-	13	
Forward Transconductance	$V_{DS} = 10\text{V}, I_D = 0.2\text{A}$	g_{FS}	80	-	-	mS
Dynamic						
Gate Resistance	$V_{DS} = 0\text{V}, V_{GS} = 0\text{V}, f = 1\text{MHz}$	R_g	-	200	-	Ω
Total Gate Charge	$V_{DS} = 10\text{V}, V_{GS} = 4.5\text{V}, I_D = 0.5\text{A}$	Q_g	-	0.4	-	nC
Gate-Source Charge		Q_{gs}	-	0.2	-	
Gate-Drain Charge		Q_{gd}	-	0.1	-	
Input Capacitance	$V_{DS} = 25\text{V}, V_{GS} = 0\text{V}, f = 1\text{MHz}$	C_{iss}	-	22.5	50.0	pF
Output Capacitance		C_{oss}	-	9.0	25.0	
Reverse Transfer Capacitance		C_{rss}	-	7.5	10.0	
Turn-On Delay Time	$V_{GS} = 10\text{V}, V_{DS} = 30\text{V}, I_D = 0.5\text{A}, R_g = 25\Omega$	$t_{d(on)}$	-	2.7	-	ns
Turn-On Rise Time		t_r	-	2.5	-	
Turn-Off Delay Time		$t_{d(off)}$	-	13.0	-	
Turn-Off Fall Time		t_f	-	8.0	-	
Drain-Source Body Diode						
Drain-Source Diode Forward Voltage	$I_S = 0.5\text{A}, V_{GS} = 0\text{V}$	V_{SD}	-	0.85	-	V
Reverse Recovery Time	$I_S = 0.5\text{A}, dI/dt = 100\text{A}/\mu\text{s}$	t_{rr}	-	30	-	ns
Reverse Recovery Charge		Q_{rr}	-	29	-	nC



RATINGS AND CHARACTERISTIC CURVES

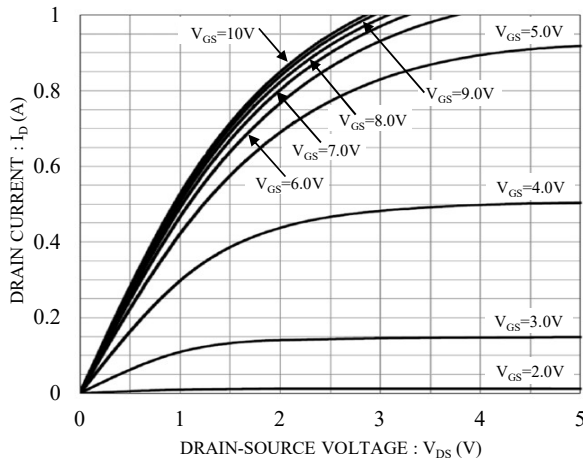


Fig.1 Typical Output Characteristics

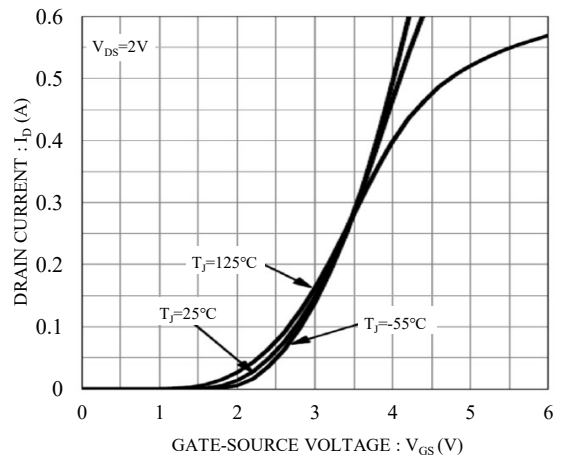


Fig.2 Typical Transfer Characteristics

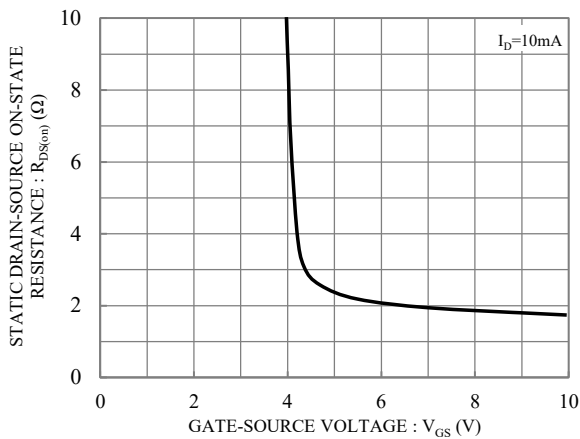


Fig.3 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

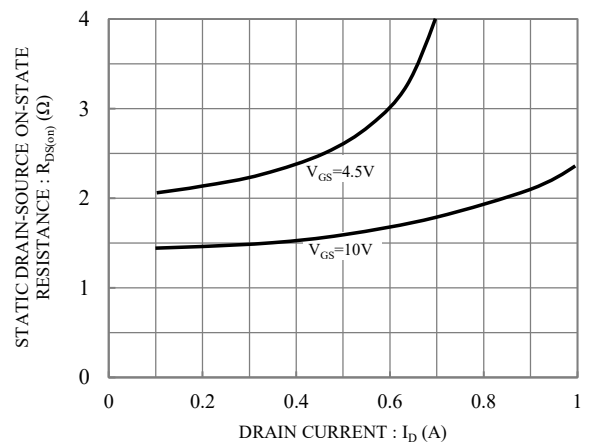


Fig.4 Static Drain-Source On-State Resistance vs. Drain Current

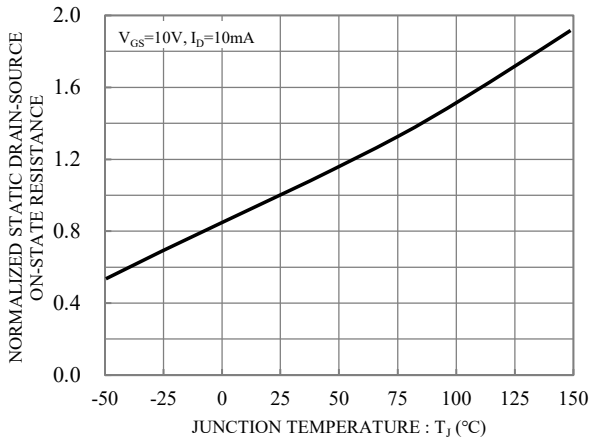


Fig.5 Normalized Static Drain-Source On-state Resistance vs. Junction Temperature

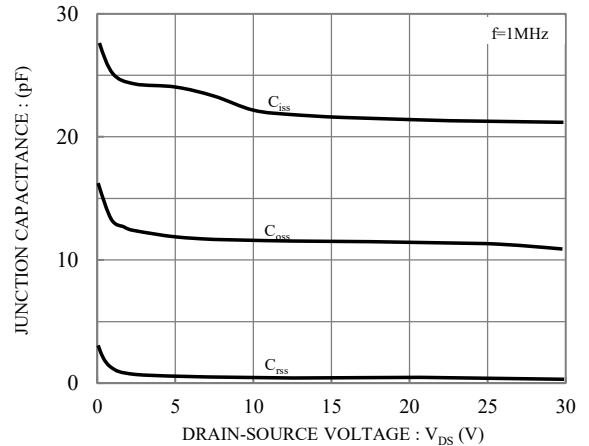


Fig.6 Capacitance vs. Drain-Source Voltage



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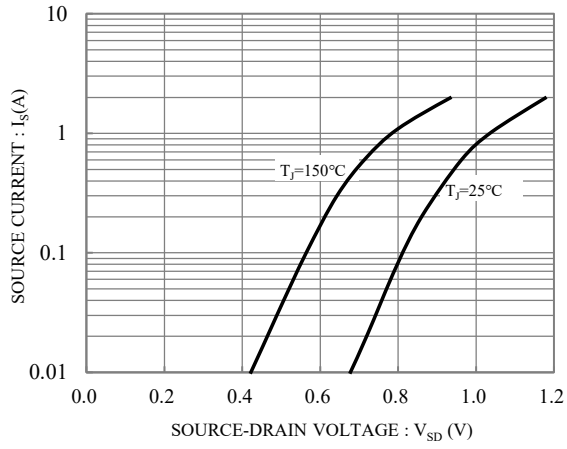


Fig.7 Diode Forward Voltage vs. Source Current

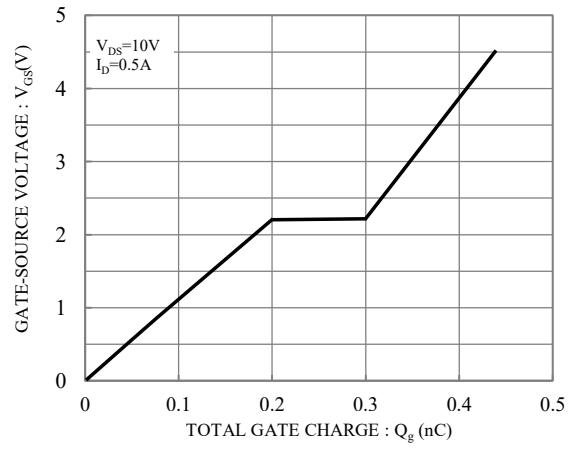


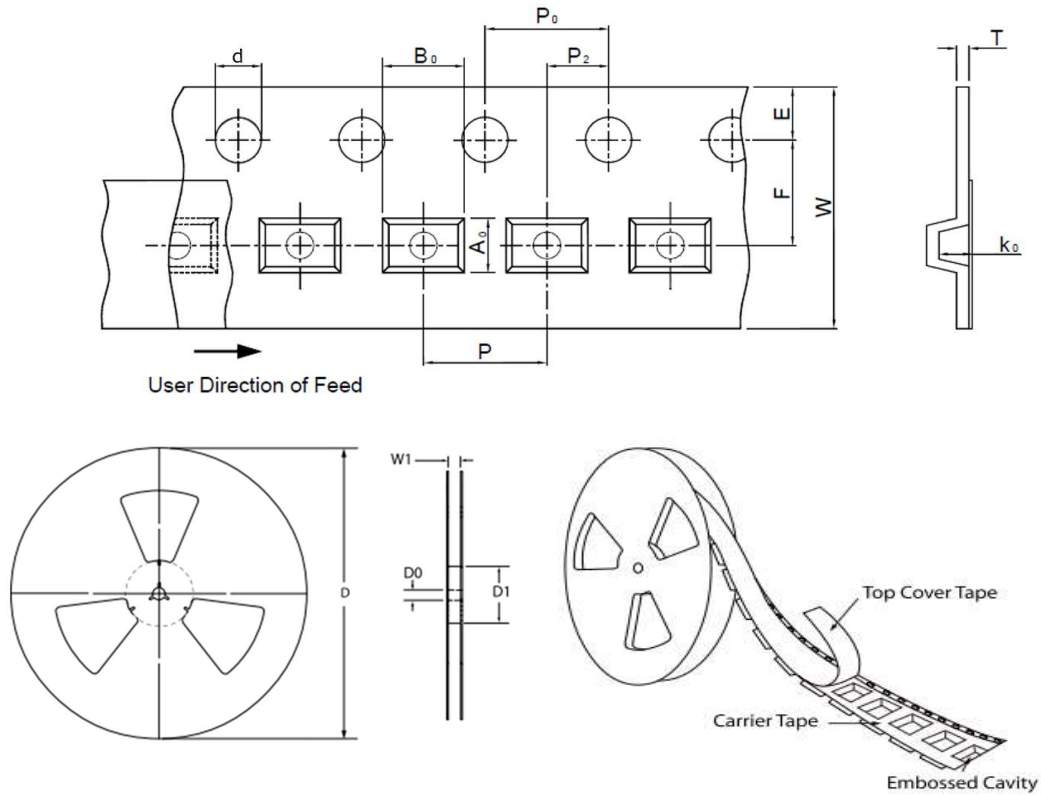
Fig.8 Gate Charge Characteristics



SM3018KDWH

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TAPE & REEL SPECIFICATION



Item	Symbol	SOT-363
Carrier width	A ₀	2.30 ± 0.10
Carrier length	B ₀	2.30 ± 0.10
Carrier depth	K ₀	1.20 ± 0.10
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	178.00 ± 2.00
Feed hole width	D ₀	13.00 ± 0.50
Reel inner diameter	D ₁	MIN. 50.00
Sprocket hole position	E	1.75 ± 0.10
Punch hole position	F	3.50 ± 0.10
Sprocket hole pitch	P ₀	4.00 ± 0.10
Punch hole pitch	P ₁	4.00 ± 0.10
Embossment center	P ₂	2.00 ± 0.10
Overall tape thickness	T	0.60 ± 0.10
Tape width	W	8.00 ± 0.30
Reel width	W1	MAX. 10.00

ORDER INFORMATION

Package	Reel Size	Quantity
SOT-363	7"	3,000

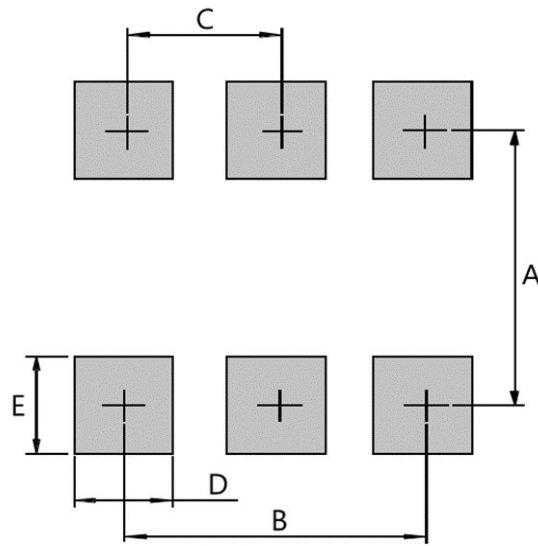
MARKING CODE

Part Number	Marking Code
SM3018KDWH	MP



SM3018KDW H

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Unit : mm

PACKAGE	A	B	C	D	E
SOT-363	1.90	1.30	0.65	0.42	0.60