

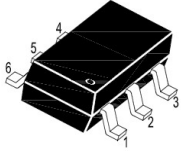


# SM620KDW H

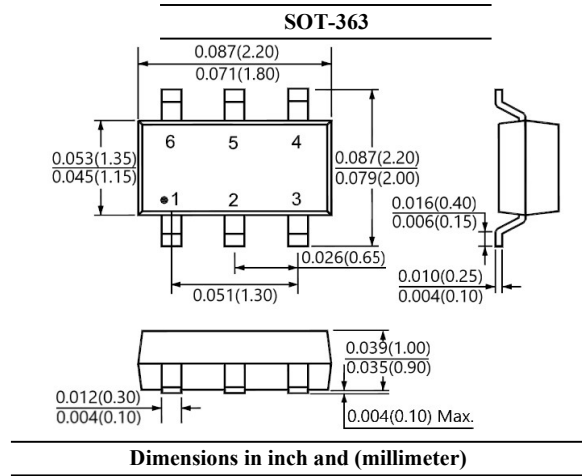
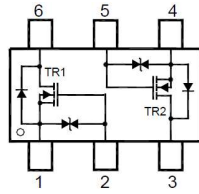
## Dual N-Channel Enhancement Mode Field Effect Transistor

### FEATURES

- Low Gate Threshold Voltage
- Fast Switching Speed
- ESD protected up to 2KV
- Suffix "H" indicates Halogen-free parts, ex. SM620KDW H



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



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DSS}$	60	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V
Continuous Drain Current Steady State	$I_D$	$T_A = 25^\circ\text{C}$	350
		$T_A = 70^\circ\text{C}$	290
Pulsed Drain Current	$I_{DM}$	1.5	A
Power Dissipation	$P_D$	Note 1	320
		Note 2	410
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	Note 1	400
		Note 2	312
Operating and Storage Temperature Range	$T_J, T_{stg}$	- 55 to + 150	$^\circ\text{C}$

Note:

1. Device mounted on FR-4 PCB, with minimum recommended pad layout.

Device mounted on 1" x 1" FR-4 PCB with high coverage 2oz. Copper, single sided. Pulse width  $\leq 10\mu\text{s}$ , Duty Cycle  $\leq 1\%$



# SM620KDW H

## Dual N-Channel Enhancement Mode Field Effect Transistor

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

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
<b>Static</b>						
Drain Source Breakdown Voltage	$I_D = 250\mu\text{A}$	$BV_{DSS}$	60	-	-	V
Zero Gate Voltage Drain Current	$V_{DS} = 48\text{V}$	$I_{DSS}$	-	-	1	$\mu\text{A}$
Gate Source Leakage Current	$V_{GS} = \pm 20\text{V}$	$I_{GSS}$	-	-	$\pm 10$	$\mu\text{A}$
Gate Threshold Voltage	$I_D = 250\mu\text{A}$	$V_{GS(th)}$	0.5	-	1.0	V
Static Drain Source On-Resistance	$V_{GS} = 4.5\text{V}$ , $I_D = 100\text{mA}$	$R_{DS(on)}$	-	-	2.0	$\Omega$
	$V_{GS} = 2.5\text{V}$ , $I_D = 50\text{mA}$		-	-	2.5	
	$V_{GS} = 1.8\text{V}$ , $I_D = 50\text{mA}$		-	-	3.2	
Forward Transconductance	$V_{DS} = 10\text{V}$ , $I_D = 0.2\text{A}$	$ g_{FS} $	-	1.8	-	S
<b>Dynamic</b>						
Input Capacitance	$V_{GS} = 0\text{V}$ , $V_{DS} = 30\text{V}$ , $f = 1\text{MHz}$	$C_{iss}$	-	32.0	-	pF
Output Capacitance		$C_{oss}$	-	3.9	-	
Reverse Transfer Capacitance		$C_{rss}$	-	2.4	-	
Turn on Delay Time	$V_{DD} = 30\text{V}$ , $I_D = 0.2\text{A}$ , $V_{GS} = 10\text{V}$ , $R_G = 25\Omega$	$t_{d(on)}$	-	2.4	-	ns
Turn on Rise Time		$t_r$	-	2.5	-	
Turn off Delay Time		$t_{d(off)}$	-	22.6	-	
Turn off Fall Time		$t_f$	-	12.5	-	
<b>Drain-Source Body Diode</b>						
Diode Forward Voltage	$I_S = 115\text{mA}$	$V_{SD}$	-	-	1.3	V



# SM620KDW

## Dual N-Channel Enhancement Mode Field Effect Transistor

### RATINGS AND CHARACTERISTIC CURVES

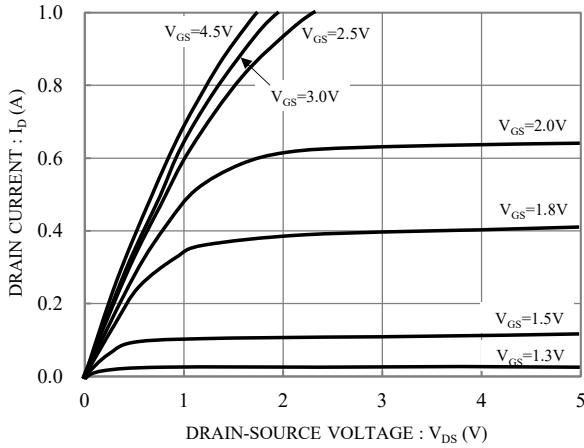


Fig.1 Typical Output Characteristics

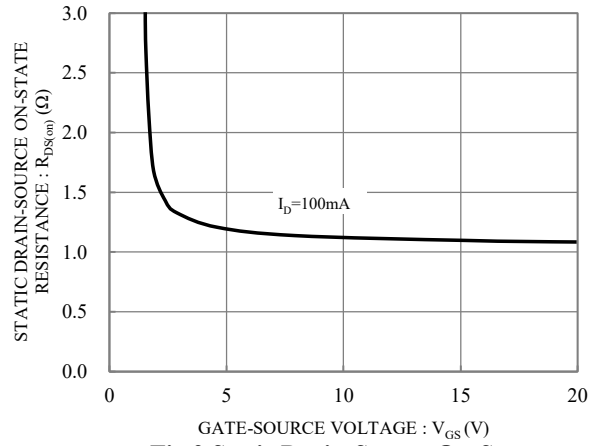


Fig.2 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

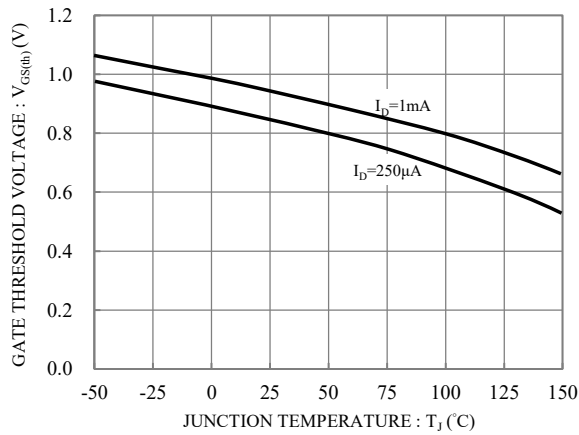


Fig.3 Gate Threshold Voltage vs. Junction Temperature

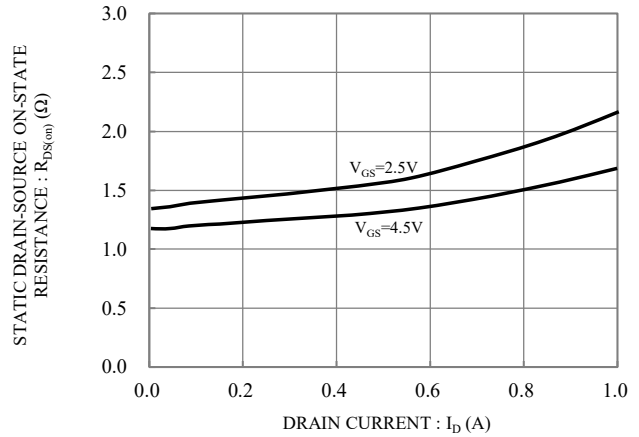


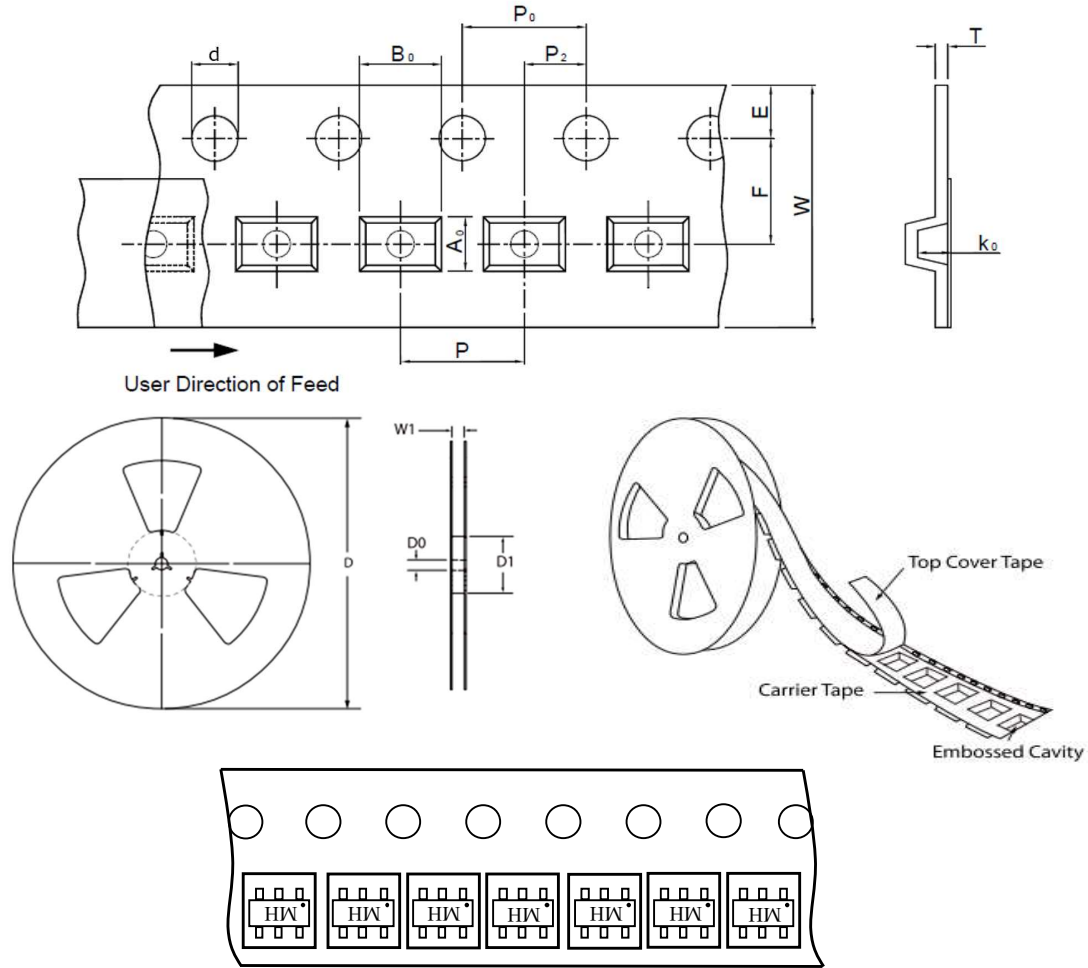
Fig.4 Static Drain-Source On-State Resistance vs. Drain Current



# SM620KDW H

## Dual N-Channel Enhancement Mode Field Effect Transistor

### TAPE & REEL SPECIFICATION



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

### ORDER INFORMATION

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

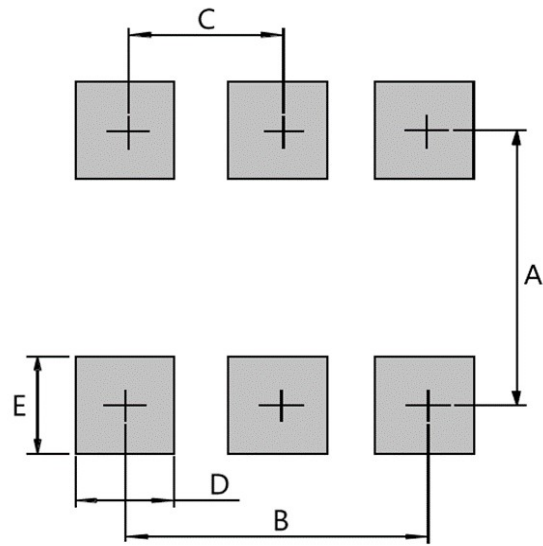
### MARKING CODE

Part Number	Marking Code
SM620KDW H	MH



# SM620KDW

Dual N-Channel Enhancement Mode Field Effect Transistor



Unit : mm

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