

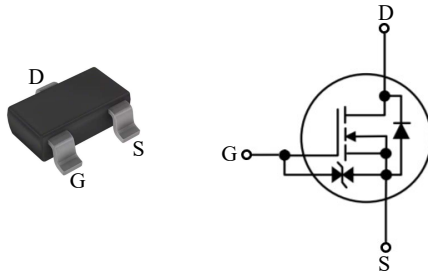


SM2530KTDSH

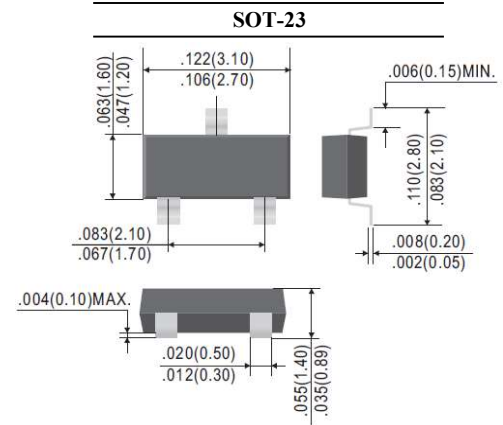
N-Channel Enhancement Mode Field Effect Transistor

FEATURES

· Suffix "H" indicates Halogen-free parts, ex.SM2530KTDSH



Pin	Description
G	Gate
S	Source
D	Drain



Dimensions in inchs and (millimeters)

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	I_D	2.5	A
Pulsed Drain Current	I_{DM}	10	A
Power Dissipation (Note 1)	P_D	1	W
Thermal Resistance, Junction-to-ambient (Note 1)	$R_{\theta JA}$	125	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{stg}	- 55 to + 150	$^\circ\text{C}$

Note :

1. Mounted on a ceramic board



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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	$I_D = 1\text{mA}$	BV_{DSS}	30	-	-	V
Zero Gate Voltage Drain Current	$V_{DS} = 30\text{V}$	I_{DSS}	-	-	1	μA
Gate-Body Leakage Current	$V_{GS} = \pm 20\text{V}$	I_{GSS}	-	-	± 10	μA
Gate Threshold Voltage	$V_{DS} = 10\text{V}, I_D = 1\text{mA}$	$V_{GS(th)}$	1.0	-	2.5	V
Static Drain Source On-Resistance	$V_{GS} = 10\text{V}, I_D = 2.5\text{A}$	$R_{DS(on)}$	-	-	70	m Ω
	$V_{GS} = 4.5\text{V}, I_D = 2.5\text{A}$		-	-	105	
	$V_{GS} = 4\text{V}, I_D = 2.5\text{A}$		-	-	118	
Forward Transconductance	$V_{DS} = 10\text{V}, I_D = 2.5\text{A}$	g_{FS}	1.5	-	-	S
Dynamic						
Total Gate Charge	$V_{GS} = 5\text{V}, V_{DS} = 15\text{V}, I_D = 2.5\text{A}$	Q_g	-	2.9	-	nC
Gate-Source Charge		Q_{gs}	-	0.8	-	
Gate-Drain Charge		Q_{gd}	-	0.9	-	
Input Capacitance	$V_{DS} = 10\text{V}, f = 1\text{MHz}$	C_{iss}	-	165	-	pF
Output Capacitance		C_{oss}	-	55	-	
Reverse Transfer Capacitance		C_{rss}	-	35	-	
Turn-On Delay Time	$V_{DD} = 15\text{V}, I_D = 1.25\text{A}, V_{GS} = 10\text{V}, R_L = 12\Omega, R_G = 10\Omega$	$t_{d(on)}$	-	6	-	ns
Turn-On Rise Time		t_r	-	10	-	
Turn-Off Delay Time		$t_{d(off)}$	-	20	-	
Turn-Off Fall Time		t_f	-	5	-	
Drain-Source Body Diode						
Drain-Source Diode Forward Voltage	$I_S = 3.2\text{A}$	V_{SD}	-	-	1.2	V



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RATINGS AND CHARACTERISTIC CURVES

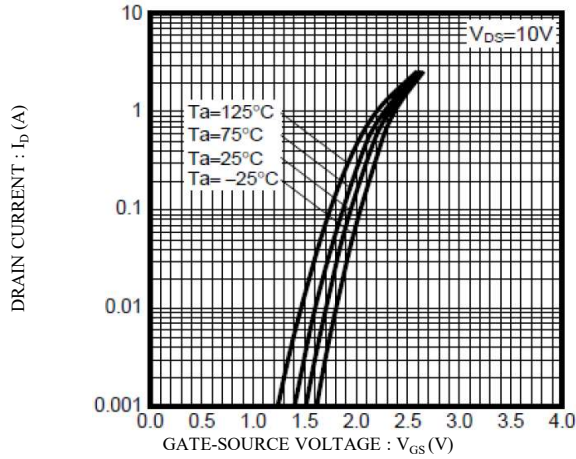


Fig.1 Typical transfer characteristics

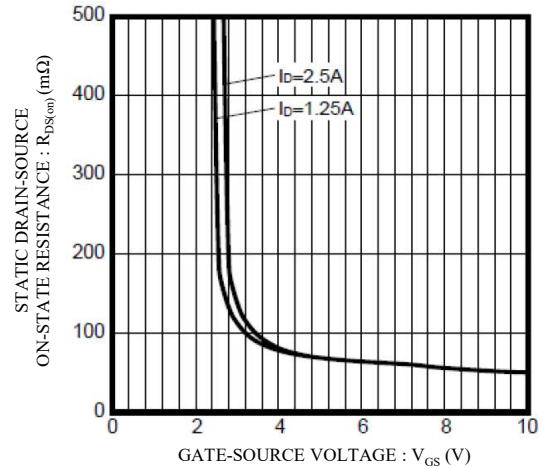


Fig.2 Static drain-source on-state resistance vs. gate-source voltage

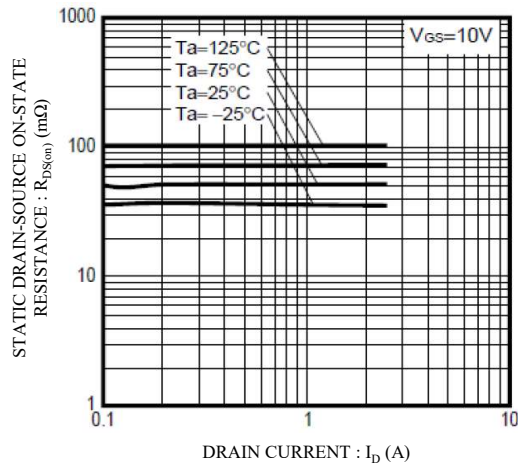


Fig.3 Static drain-source on-state resistance vs. Drain current

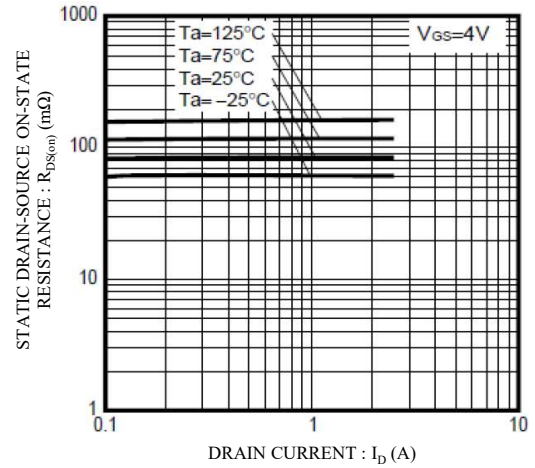


Fig.4 Static drain-source on-state resistance vs. Drain current

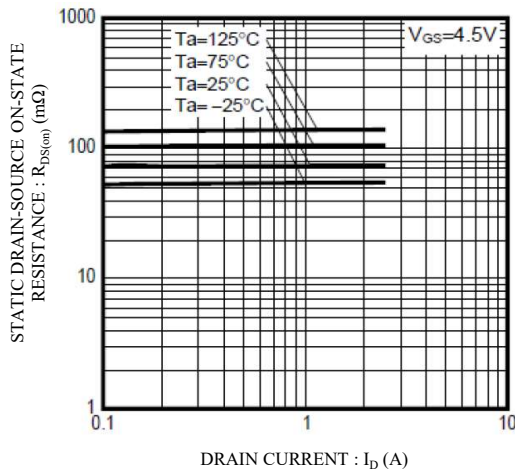


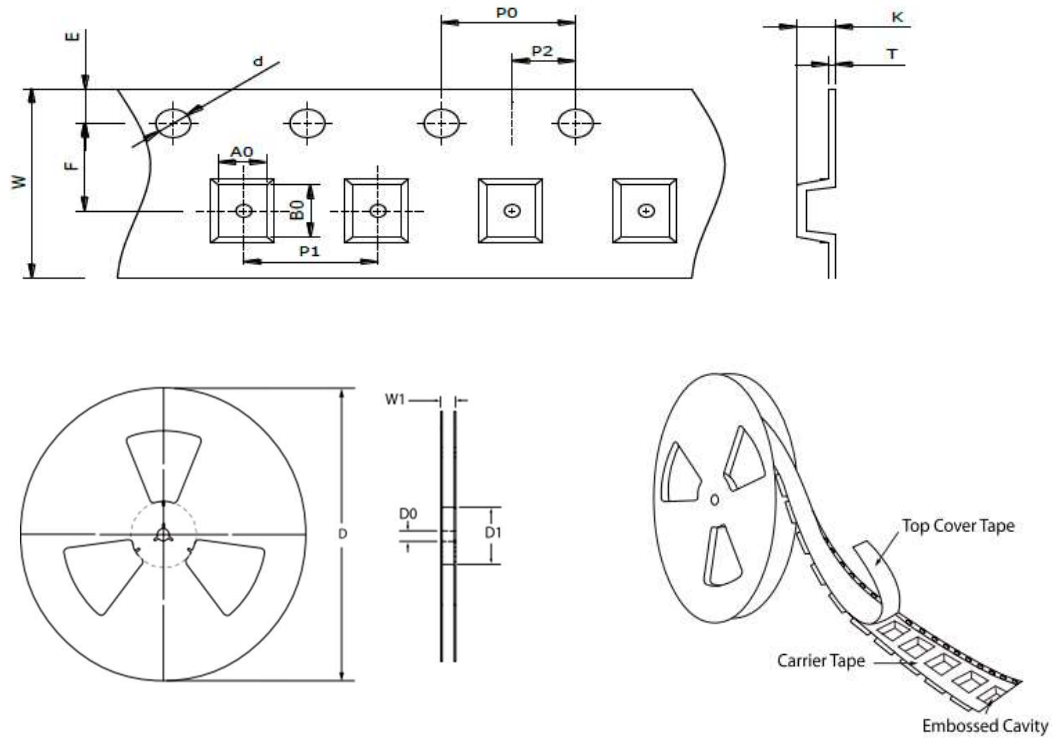
Fig.5 Static drain-source on-state resistance vs. Drain current



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TAPE & REEL SPECIFICATION



Item	Symbol	SOT-23
Carrier width	A ₀	3.30 ± 0.10
Carrier length	B ₀	3.00 ± 0.10
Carrier depth	K	1.70 ± 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	0.20 ± 0.05
Tape width	W	8.00 ± 0.20
Reel width	W ₁	MAX. 14.50

ORDER INFORMATION

Package	Reel Size	Quantity
SOT-23	7"	3,000

MARKING CODE

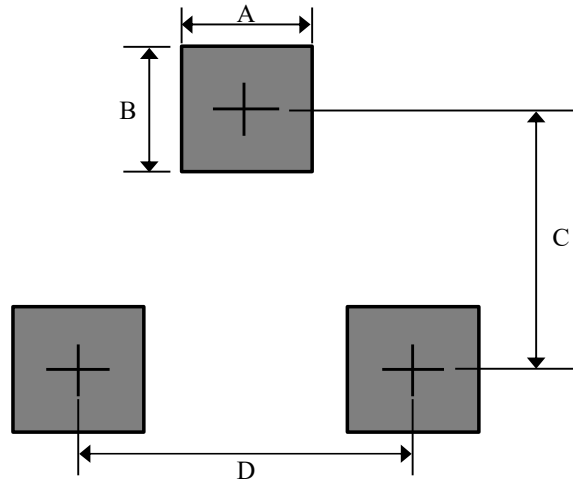
Part Number	Marking Code
SM2530KTDSH	QY



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SUGGESTED SOLDER PAD LAYOUT



Unit : mm

PACKAGE	A	B	C	D
SOT-23	0.80	1.00	2.40	1.90