

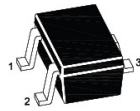
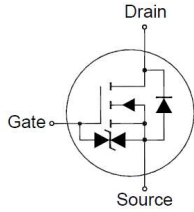


SM302KWTH

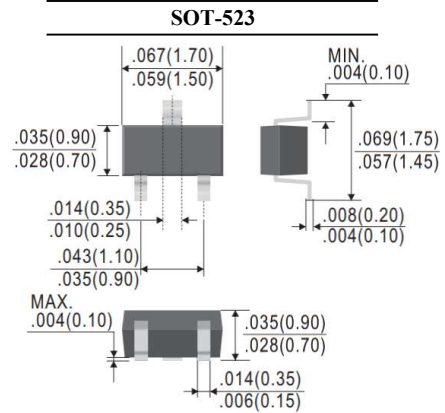
N-Channel Enhancement Mode Field Effect Transistor

FEATURES

· Suffix "H" indicates Halogen-free parts, ex. SM302KWTH



1.Gate 2.Source 3.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_{DSS}	20	V
Gate-Source Voltage	V_{GSS}	± 12	V
Drain Current	I_D	600	mA
Peak Pulse Drain Current	I_{DM}	1	A
Total Power Dissipation (Steady state)	(Note 1)	625	mW
	(Note 2)	446	mW
Thermal Resistance from Junction to Ambient	(Note 1)	200	$^\circ\text{C}/\text{W}$
	(Note 2)	280	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{stg}	- 55 to + 150	$^\circ\text{C}$

Note :

1. Mounted on a 1 in² pad of 2 oz copper.
2. Mounted on a minimum pad of 2 oz copper Scale 1:1 on letter size paper.

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

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Drain Source Breakdown Voltage	$I_D = 250\mu\text{A}$	$V_{(BR)DSS}$	20	-	-	V
Zero Gate Voltage Drain Current	$V_{DS} = 16\text{V}$	I_{DSS}	-	-	1	μA
Gate Source Leakage Current	$V_{GS} = \pm 10\text{V}$	I_{GSS}	-	-	± 10	μA
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	$V_{GS(th)}$	0.5	-	1.5	V
Static Drain Source On-Resistance	$V_{GS} = 4.5\text{V}, I_D = 600\text{mA}$	$R_{DS(on)}$	-	-	0.35	Ω
	$V_{GS} = 2.5\text{V}, I_D = 500\text{mA}$		-	-	0.50	
	$V_{GS} = 1.8\text{V}, I_D = 150\text{mA}$		-	-	1.20	
Forward Transconductance	$V_{DS} = 5\text{V}, I_D = 600\text{mA}$	$ g_{fs} $	-	1.8	-	S
Total Gate Charge	$V_{DS} = 10\text{V}, I_D = 600\text{mA}, V_{GS} = 4.5\text{V}$	Q_g	-	0.80	-	nC
Gate Source Charge		Q_{gs}	-	0.16	-	
Gate Drain Charge		Q_{gd}	-	0.26	-	
Input Capacitance	$V_{GS} = 0\text{V}, V_{DS} = 10\text{V}, f = 1\text{MHz}$	C_{iss}	-	66	-	pF
Output Capacitance		C_{oss}	-	17	-	
Reverse Transfer Capacitance		C_{rss}	-	12	-	
Turn-On Delay Time	$V_{DD} = 10\text{V}, I_D = 1\text{A}, V_{GS} = 4.5\text{V}, R_{GEN} = 6\Omega$	$t_{d(on)}$	-	6.0	-	ns
Rise Time		t_r	-	8.0	-	
Turn-Off Delay Time		$t_{d(off)}$	-	8.0	-	
Fall time		t_f	-	2.4	-	
Drain-Source Body Diode						
Diode Forward Voltage	$V_{GS} = 0\text{V}, I_S = 150\text{mA}$	V_{SD}	-	-	1.2	V



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