

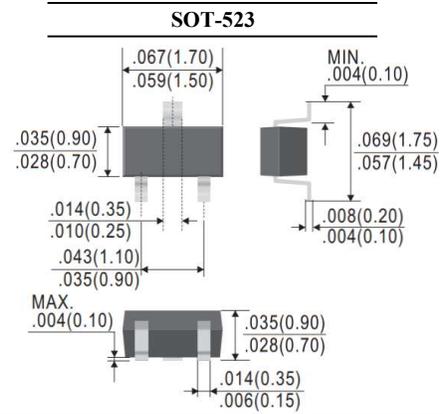
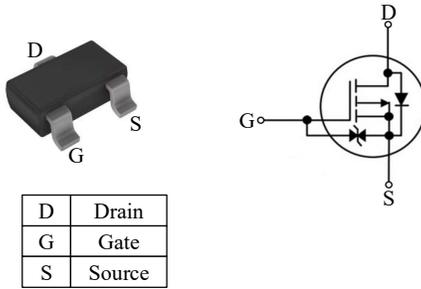


SM0421KWTH

P-Channel Enhancement Mode Field Effect Transistor

FEATURES

· Suffix "H" indicates Halogen-free parts, ex. SM0421KWTH



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}	± 10	V	
Drain Current	I_D	$T_A = 25^\circ\text{C}$	-350	mA
		$T_A = 85^\circ\text{C}$	-255	
Peak Pulse Drain Current	I_{DM}	-1.4	A	
Total Power Dissipation (Note 1)	P_{tot}	250	mW	
Thermal Resistance from Junction to Ambient (Note 1)	$R_{\theta JA}$	600	$^\circ\text{C}/\text{W}$	
Operating and Storage Temperature Range	T_j, T_{stg}	-55 to +150	$^\circ\text{C}$	

Note :

1. Surface Mounted on "1 X 1" FR4 Board

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

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Static						
Drain Source Breakdown Voltage	$I_D = -250\mu\text{A}$	$V_{(BR)DSS}$	-20	-	-	V
Zero Gate Voltage Drain Current	$V_{DS} = -20\text{V}$	I_{DSS}	-	-	-0.1	μA
Gate Source Leakage Current	$V_{GS} = \pm 10\text{V}$	I_{GSS}	-	-	± 10	μA
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$	$V_{GS(th)}$	-0.45	-	-0.90	V
Static Drain Source On-Resistance	$V_{GS} = -4.5\text{V}, I_D = -350\text{mA}$	$R_{DS(on)}$	-	-	0.9	Ω
	$V_{GS} = -2.5\text{V}, I_D = -300\text{mA}$		-	-	1.0	
Forward Transconductance	$V_{DS} = -5\text{V}, I_D = -350\text{mA}$	$ g_{fs} $	-	1	-	S
Dynamic						
Input Capacitance	$V_{GS} = 0\text{V}, V_{DS} = -10\text{V}, f = 1\text{MHz}$	C_{iss}	-	55	-	pF
Output Capacitance		C_{oss}	-	16	-	
Reverse Transfer Capacitance		C_{rss}	-	6	-	
Turn-On Delay Time		$t_{d(on)}$	-	5	-	ns
Rise Time	t_r	-	3	-		
Turn-Off Delay Time	$t_{d(off)}$	-	14	-		
Fall time	t_f	-	5	-		
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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RATINGS AND CHARACTERISTIC CURVES

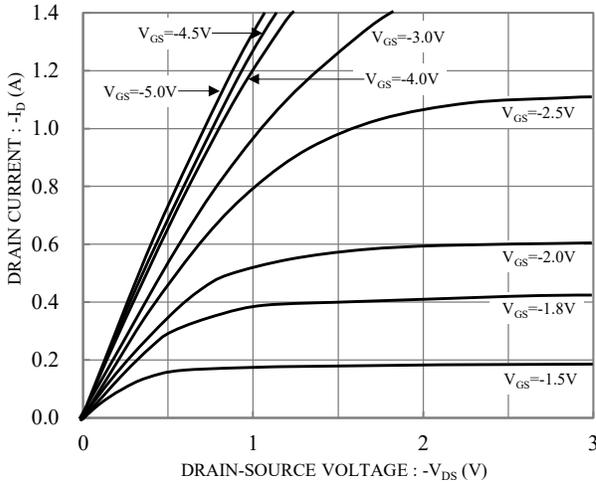


Fig.1 Typical output characteristics

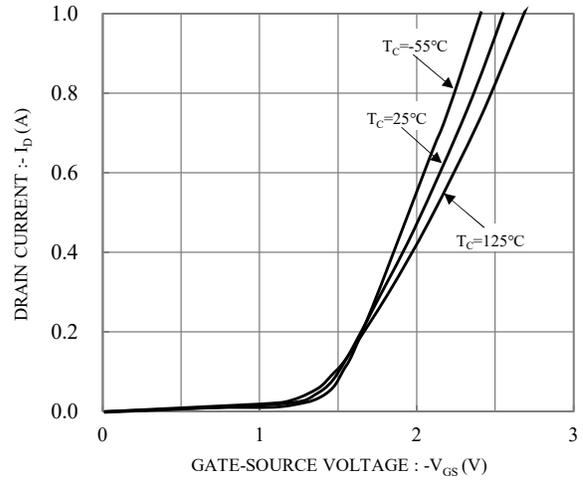


Fig.2 Typical transfer characteristics

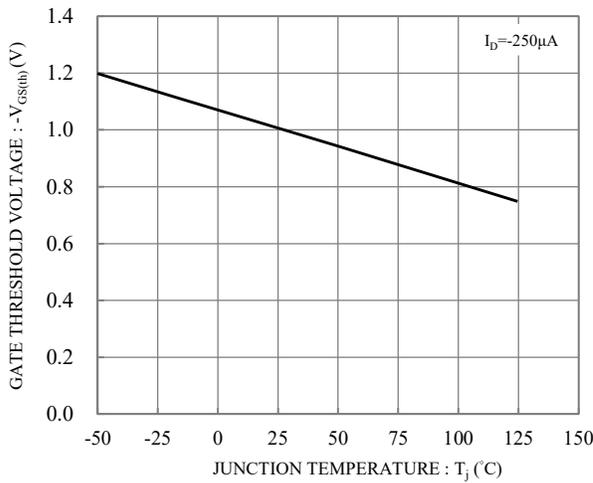


Fig.3 Gate threshold voltage vs. Junction temperature

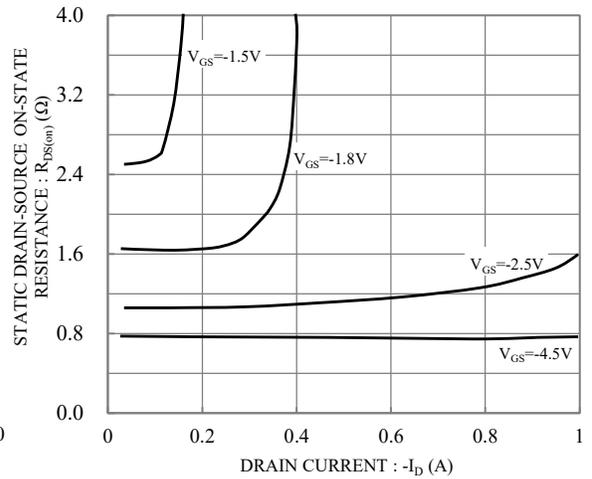


Fig.4 Static drain-source on-state resistance vs. drain current

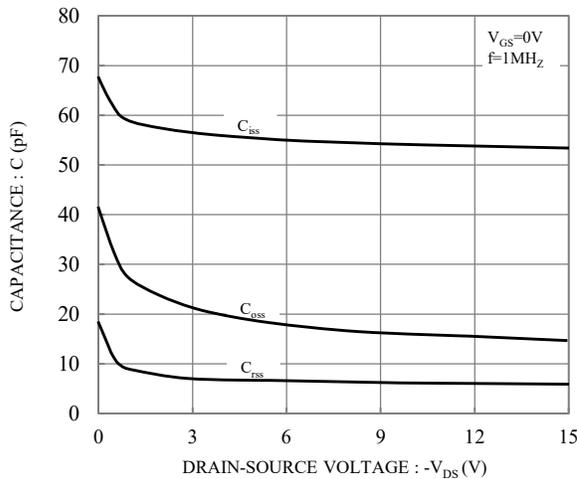


Fig.5 Typical transfer characteristics

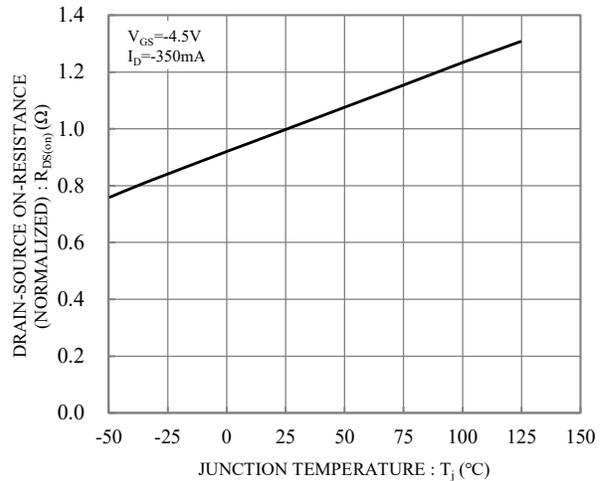


Fig.6 On-Resistance Variation with Temperature