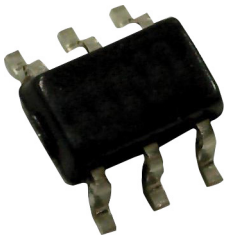
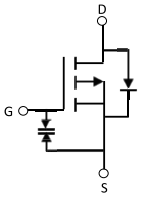
P Channel Enhancement Mode Field Effect Transistor

multicomp PRO

RoHS Compliant



Schematic Diagram



Pin Assignment		
1	G	Gate
2	S	Source
3	D	Drain

Applications

- PWM Applications
- Power Management
- Load Switch for Portable Devices

Features

- Advanced Trench Technology
- Lead Free Product is Acquired
- ESD Rating : HBM 2.0KV
- Excellent $R_{DS(ON)}$ and Low Gate Charge

Maximum Ratings @TA = +25°C

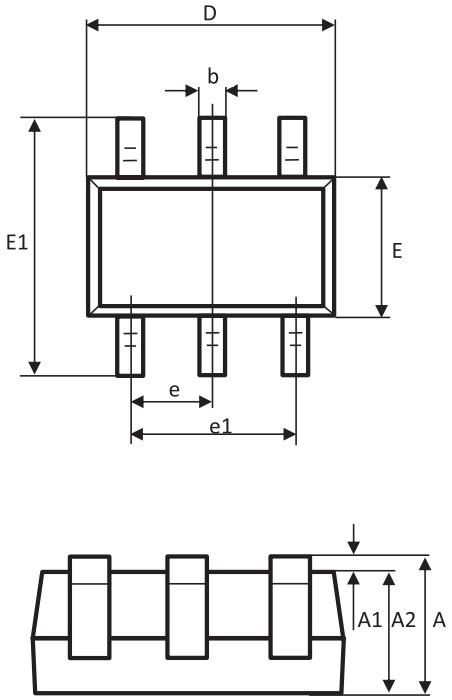
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	-4.1	A
Pulsed Drain Current (Note1.)	I_{DM}	-16.4	A
Power Dissipation	P_D	1.1	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	114	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

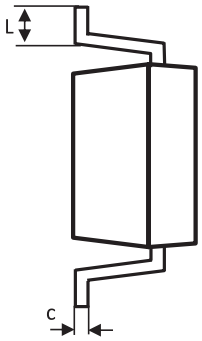
Electrical Characteristics @TA = +25°CZ

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D = -250μA	V_{DSS}	-20	--	--	V
Gate-Threshold Voltage	V_{DS} = V_{GS}, I_D = 250μA	$V_{th(GS)}$	-0.4	-0.7	-1	
Gate-Body Leakage Current	V_{DS} = 0V, V_{GS} = ±10V	I_{GSS}	--	--	±10	nA
Zero Gate Voltage Drain Current	V_{DS} = 20V, V_{GS} = 0V	I_{DSS}			-1	μA
Drain-Source On-Resistance (Note2.)	V_{GS} = 4.5V, I_D = -4A	$R_{DS(ON)}$		30	39	mΩ
	V_{GS} = 2.5V, I_D = 3A			40	56	
Diode Forward Voltage	I_S = -4.1A, V_{GS} = 0V	V_{SD}		--	-1.2	V
Continuous Diode Forward Voltage		I_S		--	-4.1	
Input Capacitance	V_{DS} = -10V, V_{GS}=0V, F = 1MHz	C_{iss}		289	--	pF
Output Capacitance		C_{oss}		98		
Reverse Transfer Capacitance		C_{rss}		22		
Total Gate Charge	V_{DS} = 10V, I_D = 4.1A, V_{GS} = 4.5V	Q_g		9		nC
Gate Source Charge		Q_{gs}		1		
Gate-Drain (“Miller” Charge)		Q_{gd}		2.6		
Turn-on Delay Time	V_{DD}=-10V, R_G = 1Ω, V_{GEN}=-4.5V, R_L = 1.2Ω,	$t_{d(ON)}$		12		ns
Turn-on Rise Time		t_R		35		
Turn-off Delay Time		$t_{d(Off)}$		30		
Turn-off Fall Time		t_F		10		

Notes: 1.Repetitive Rating : Pulse Width Limited by Maximum Junction Temperature.
2.Pulse Test : Pulse Width ≤300μs,Duty Cycle≤2%.

Outline Dimensions





SOT-23-6L Package		
Dim	**Min**	**Max**
A	--	1.2
A1	0	0.1
A2	1	1.2
b	0.3	0.5
c	0.119	0.135
D	2.8	3
E	1.5	1.7
E1	2.6	3
e	0.95 typ	
e1	1.8	2
L	0.3	0.6

Dimensions : Millimetres

Part Number Table

Description	Part Number
P Channel Enhancement Mode FET, 20V, -4.1A, SOT-23-6L	HMV4P1P02S