TPM30V5PS6-3

30V P-CHANNEL ENHANCEMENT MODE MOSFET

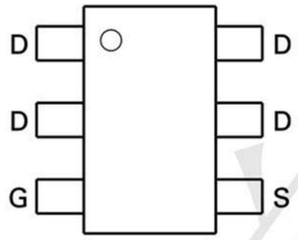
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
-30V	60mΩ@-10 V	-4.1A
	87mΩ@-4.5V	

Application

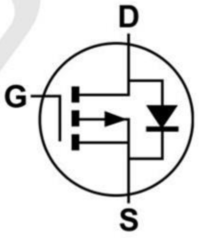
- DC-DC Converters.
- Load Switch.
- Power Management.

Package and Pin Configuration



Marking: 3P5

Circuit diagram



Equivalent Circuit

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

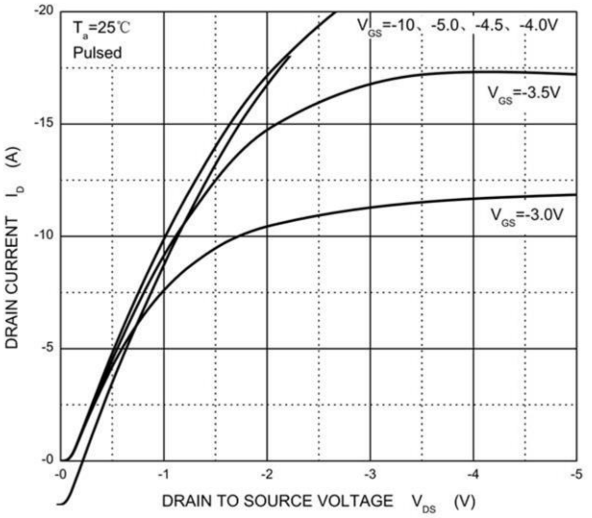
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-4.1	A
Power Dissipation	P_D	350	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-55~+150	℃

Electrical Characteristics (T_A = 25°C unless otherwise noted)

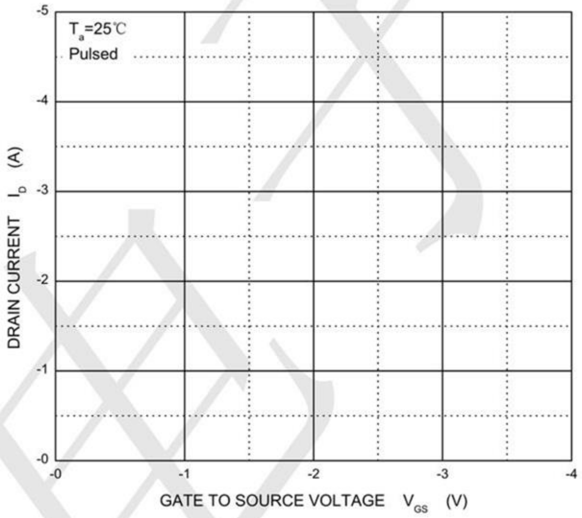
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-24V,V_{GS} = 0V			-1	μA
Gate-source leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Drain-source on-resistance (note 1)	$R_{DS(on)}$	V_{GS} =-10V, I_D =-4.1A		50	60	mΩ
		V_{GS} =-4.5V, I_D =-3A		68	87	mΩ
Forward tranconductance (note 1)	g_{fS}	V_{DS} =-5V, I_D =-4A	5.5			S
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1	-1.4	-3	V
Diode forward voltage (note 1)	V_{SD}	I_S=-1A,V_{GS}=0V			-1	V
Dynamic characteristics (note 2)						
Input capacitance	C_{iss}	V_{DS} =-15V,V_{GS} =0V,f =1MHz		700		pF
Output capacitance	C_{oss}			120		pF
Reverse transfer capacitance	C_{rss}			75		pF
Switching Characteristics (note 2)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=-10V,V_{DS}=-15V, R_L=3.6Ω,R_{GEN}=3Ω		8.6		ns
Turn-on rise time	t_r			5.0		ns
Turn-off delay time	$t_{d(off)}$			28.2		ns
Turn-off fall time	t_f			13.5		ns

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

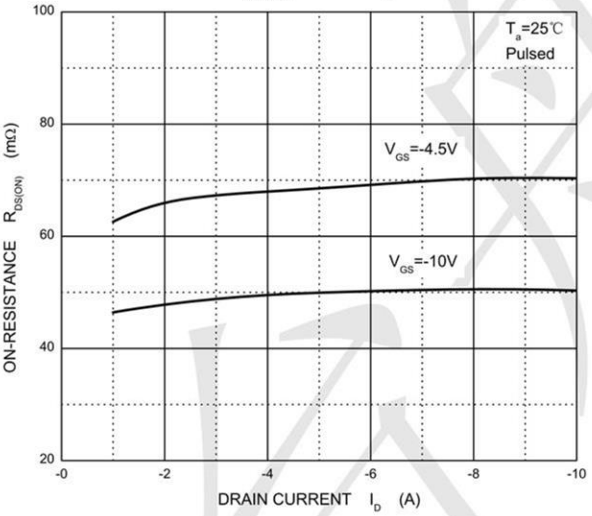
Output Characteristics



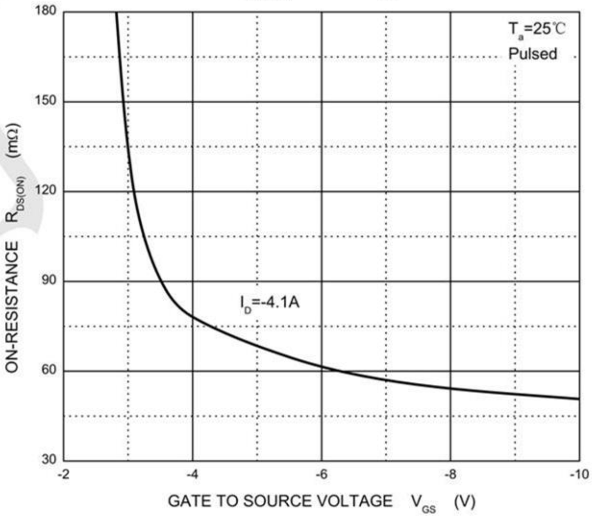
Transfer Characteristics



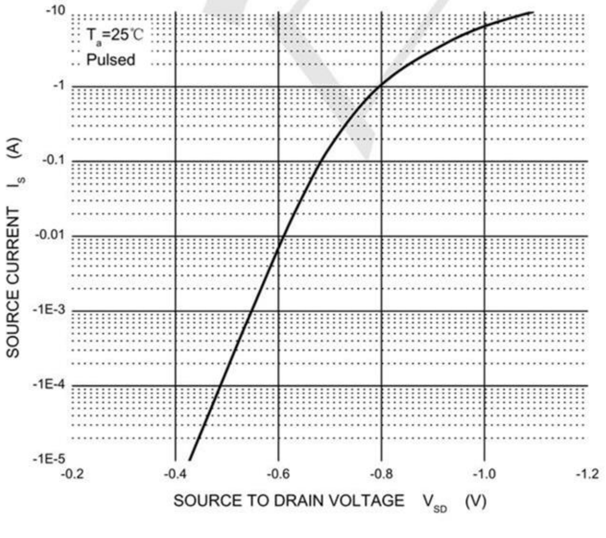
$R_{DS(ON)}$ — I_D



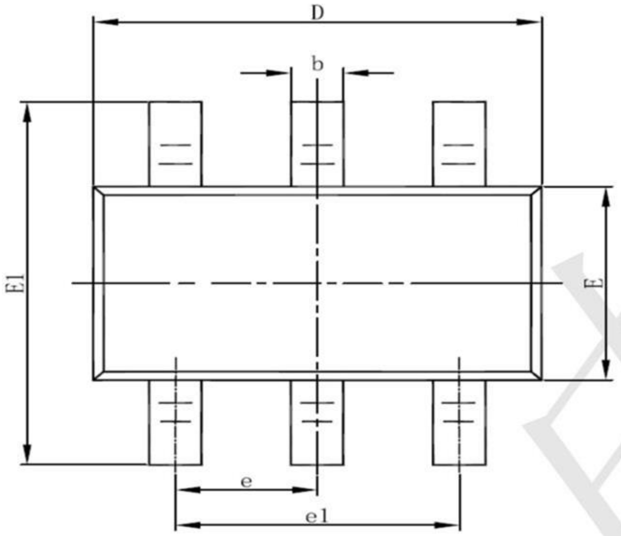
$R_{DS(ON)}$ — V_{GS}

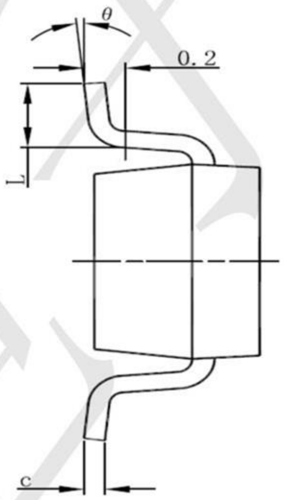


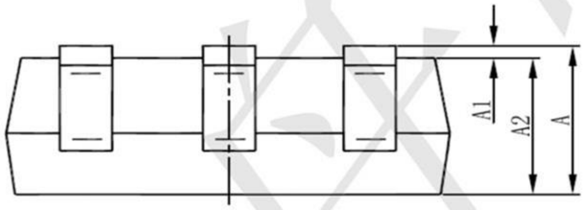
I_S — V_{SD}



SOT23-6 Package Information







Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°