PT3400

PUOLOP 迪浦

30V N-Channel Enhancement Mode MOSFET

VDS= 30V

RDS(ON), Vgs@10V, Ids@5.8A < 30mΩ
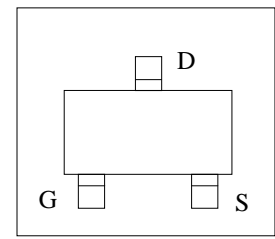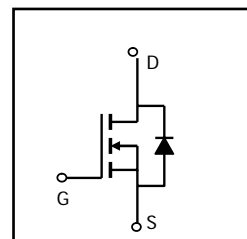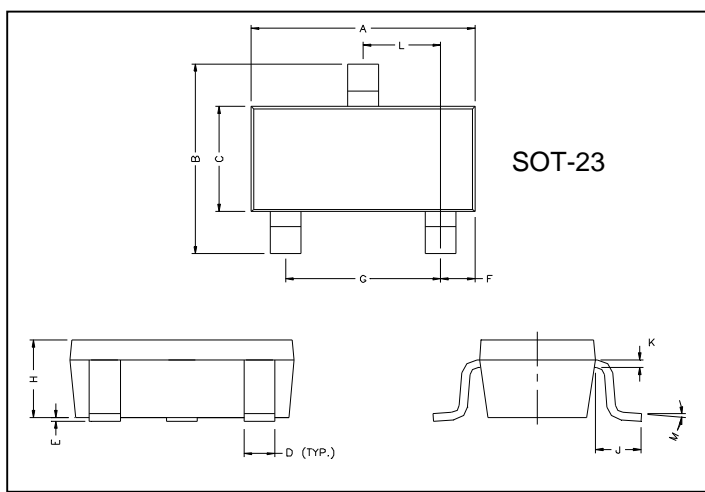
RDS(ON), Vgs@4.5V, Ids@5.0A < 33mΩ

RDS(ON), Vgs@2.5V, Ids@4.0A < 52mΩ

Features

Advanced trench process technology

High Density Cell Design For Ultra Low On-Resistance

SOT-23

REF.	Millimeter		REF.	Millimete	
	Min.	Max.		Min.	Max.
A	2.80	3.00	G	1.80	2.00
B	2.30	2.50	H	0.90	1.1
C	1.20	1.40	K	0.10	0.20
D	0.30	0.50	J	0.35	0.70
E	0	0.10	L	0.92	0.98
F	0.45	0.55	M	0°	10°

Maximum Ratings and Thermal Characteristics (TA = 25oC unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±12	
Continuous Drain Current		I_D	5.8	A
Pulsed Drain Current		I_{DM}	30	
Maximum Power Dissipation	TA = 25°C	P_D	1.4	W
	TA = 75°C		1	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted)		$R_{\theta JA}$	145	°C/W

ELECTRICAL CHARACTERISTICS (TA = 25oC unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Miax.	Unit
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V$, $I_D = 250uA$	30			V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 10V$, $I_D = 5.8A$		25.0	30.0	
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 4.5V$, $I_D = 5A$		30.0	33.0	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 2.5V$, $I_D = 4A$		40.0	52.0	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250uA$	0.7		1.4	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V$, $V_{GS} = 0V$			1	uA
Gate Body Leakage	I_{GSS}	$V_{GS} = \pm 12V$, $V_{DS} = 0V$			±100	nA
Forward Transconductance	g_{fs}	$V_{DS} = 5V$, $I_D = 5A$	10	15	—	S
Gate Resistance	Rg	F=1.0MHz	6	7	7.5	Ω
Dynamic						
Total Gate Charge	Q_g	$V_{DS} = 15V$, $I_D = 5.8A$ $V_{GS} = 4.5V$		11		nC
Gate-Source Charge	Q_{gs}			1.6		
Gate-Drain Charge	Q_{gd}			2.8		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 15V$, RL=2.7Ω $I_D = 1A$, $V_{GEN} = 10V$ $R_G = 3Ω$		7		ns
Turn-On Rise Time	t_r			15		
Turn-Off Delay Time	$t_{d(off)}$			38		
Turn-Off Fall Time	t_f			3		
Input Capacitance	C_{iss}	$V_{DS} = 10V$, $V_{GS} = 0V$ f = 1.0 MHz		340		pF
Output Capacitance	C_{oss}			115		
Reverse Transfer Capacitance	C_{rss}			33		
Source-Drain Diode						
Max. Diode Forward Current	I_S				1.6	A
Diode Forward Voltage	V_{SD}	$I_S = 1.6A$, $V_{GS} = 0V$			1.2	V

Note: Pulse test: pulse width <= 300us, duty cycle<= 2%
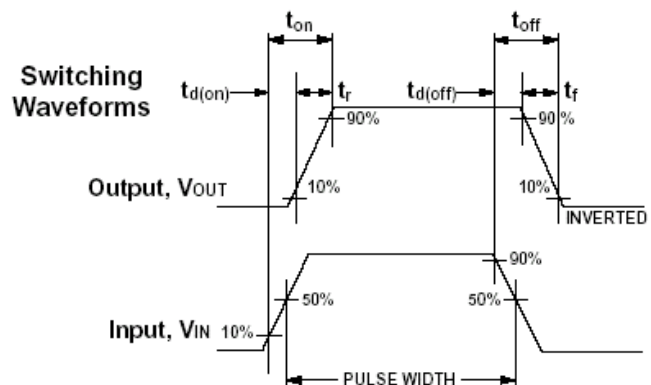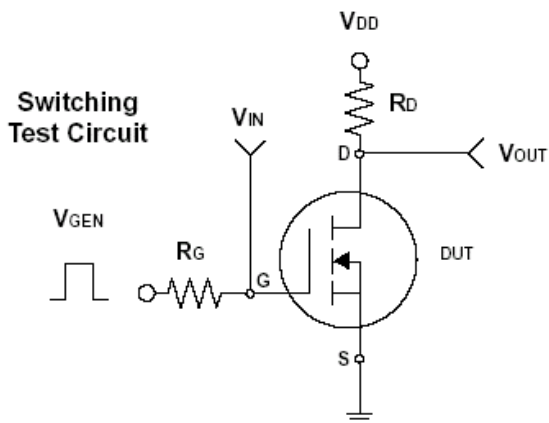
30V N-Channel Enhancement Mode MOSFET

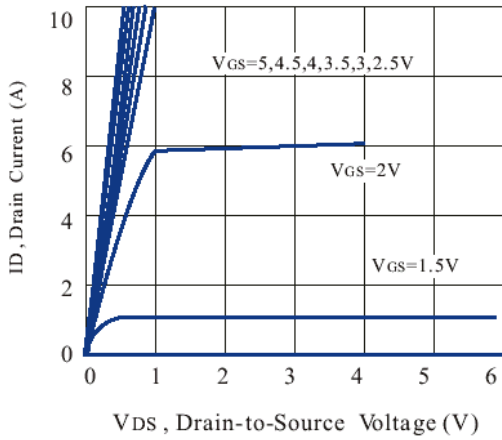## Characteristics Curve

Figure 1. Output Characteristics
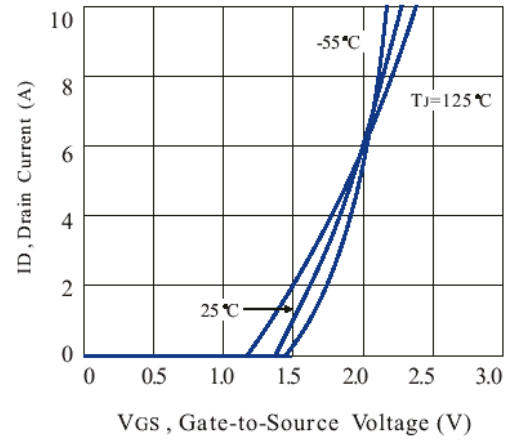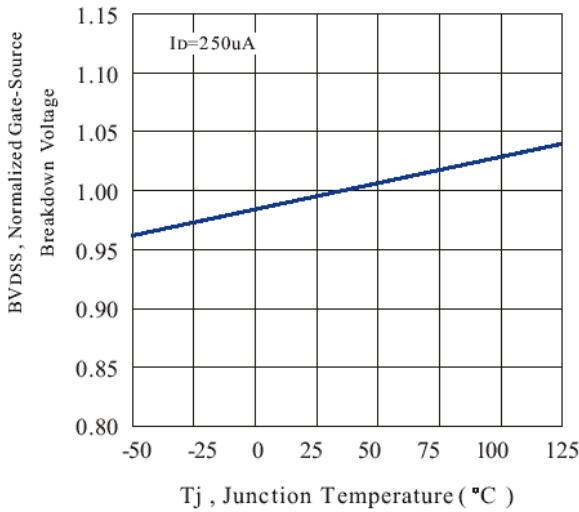

Figure 2. Transfer Characteristics

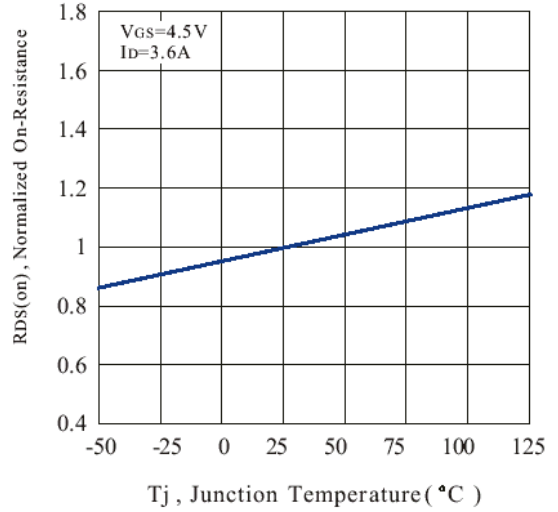Figure 3. Breakdown Voltage Variation with Temperature

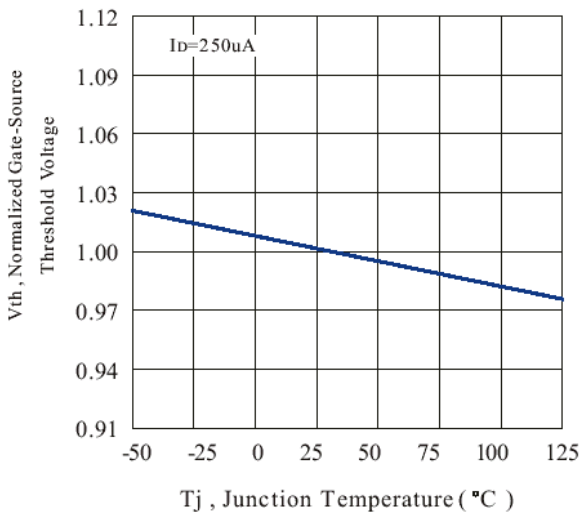Figure 4. On-Resistance Variation with Temperatur
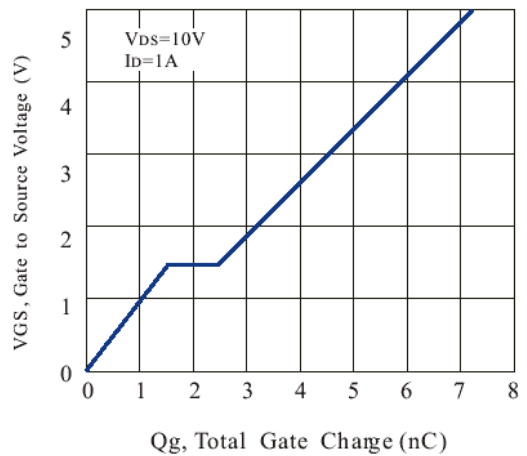

Figure 5. Gate Threshold Variation with Temperature

Figure 6. Gate Charge

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