

-30V P-Channel Enhancement Mode MOSFET

VDS= -30V

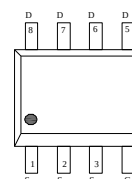
RDS(ON), Vgs@-10V, Ids@-10.5A < 22m Ω

RDS(ON), Vgs@-4.5V, Ids@-6.0A < 33m Ω

Features

Advanced trench process technology

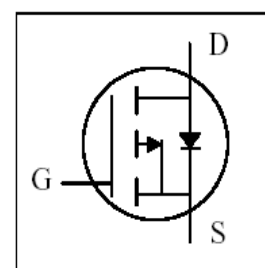
High Density Cell Design For Ultra Low On-Resistance



SOP-8

Order Information

Product	Package	Marking	Packing
MS4435	SOP-8	PT4435	3000PCS/Reel



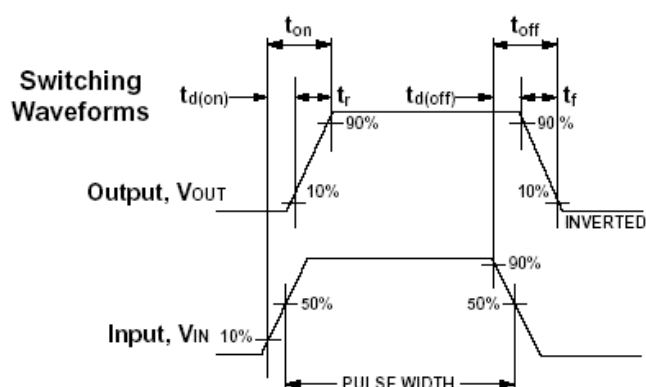
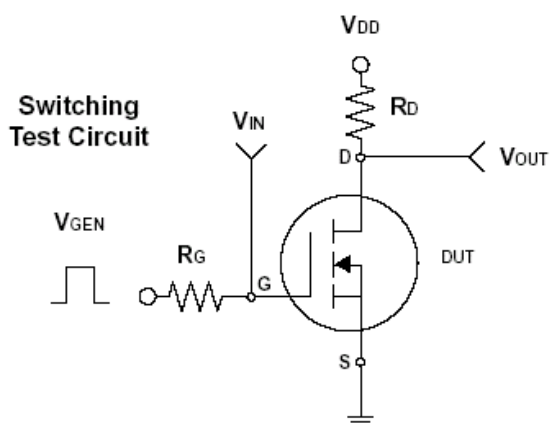
Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	-30	V
Gate-Source Voltage	V _{GS}	± 20	
Continuous Drain Current	I _D	-10.5	A
Pulsed Drain Current	I _{DM}	-50	
Maximum Power Dissipation	P _D	2.5	W
		1.2	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted)	R _{θJA}	50	°C/W

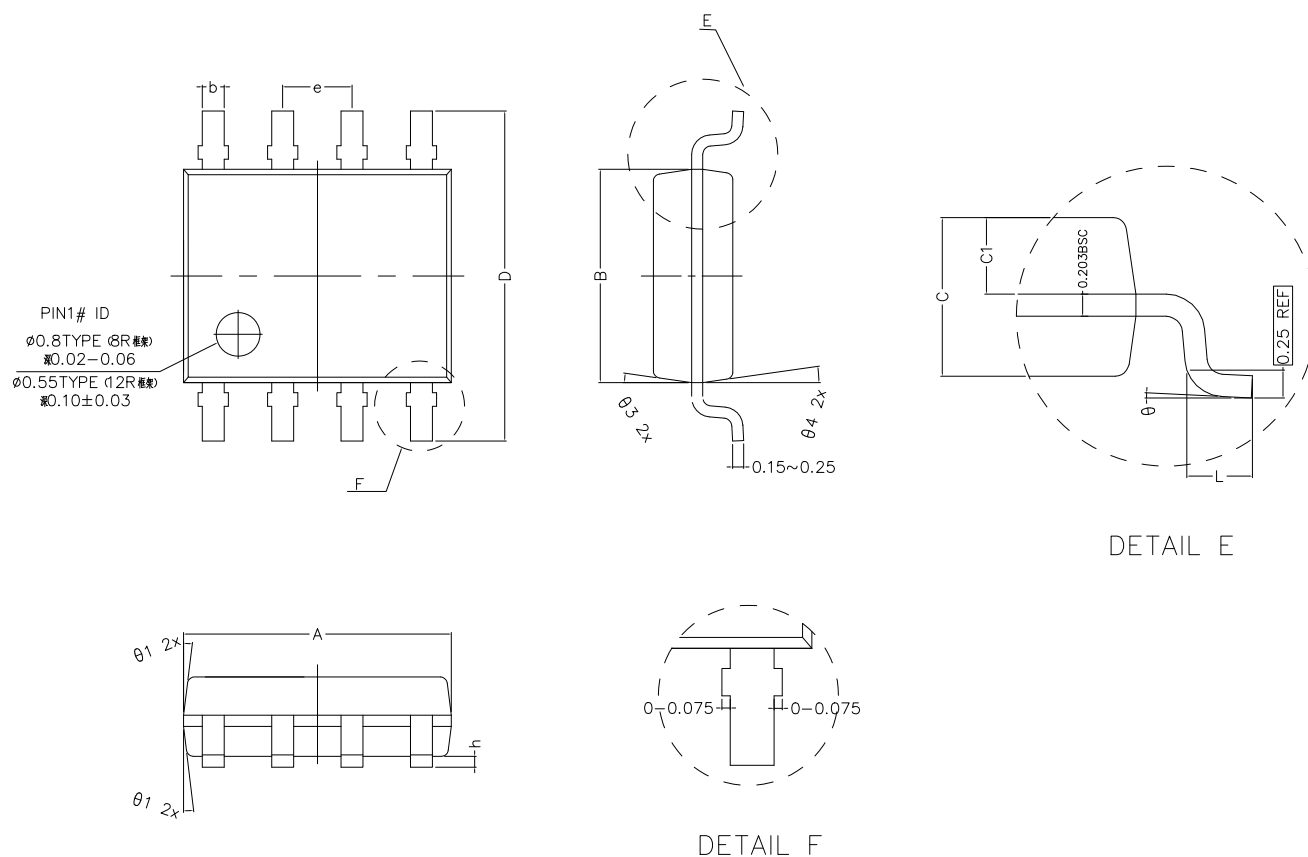
ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -10.5A$		15.0	22.0	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -6.0A$		20.0	33.0	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1	-1.4	-3	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$			-1	μA
Gate Body Leakage	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Forward Transconductance	g_{fs}	$V_{DS} = -10V, I_D = -5A$		21	—	S
Dynamic						
Total Gate Charge	Q_g	$V_{DS} = -15V, I_D = -9.1A$ $V_{GS} = 10V$		37.2		nC
Gate-Source Charge	Q_{gs}			9.84		
Gate-Drain Charge	Q_{gd}			7.52		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -15V, R_L = 15\Omega$ $I_D = -1A, V_{GEN} = -10V$ $R_G = 6\Omega$		10		ns
Turn-On Rise Time	t_r			15		
Turn-Off Delay Time	$t_{d(off)}$			110		
Turn-Off Fall Time	t_f			70		
Input Capacitance	C_{iss}	$V_{DS} = 8V, V_{GS} = 0V$ $f = 1.0\text{ MHz}$		1740		pF
Output Capacitance	C_{oss}			235		
Reverse Transfer Capacitance	C_{rss}			225		
Source-Drain Diode						
Diode Forward Voltage	V_{SD}	$I_S = -2.1A, V_{GS} = 0V$			1.2	V

Note: Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$



SOP-8 Package Outline Dimensions (Units: mm)



	MIN	NORMAL	MAX
A	4.800	4.900	5.000
B	3.800	3.900	4.000
C	1.350	1.450	1.550
C1	0.650	0.700	0.750
D	5.900	6.100	6.300
L	0.500	0.600	0.700
b	0.350	0.400	0.450
h	0.050	0.150	0.250
e	1.270TYPE		
θ ₁	7° TYPE(8R) 12° TYPE(12R)		
θ ₂	7° TYPE(8R) 10° TYPE(12R)		
θ ₃	8° TYPE(8R) 12° TYPE(12R)		
θ ₄	8° TYPE(8R) 10° TYPE(12R)		
θ	0° ~ 8°		