30V P-Ch Power MOSFET

V_{DS}		-30	V
$R_{DS(on),typ}$	V_{GS}=10V	6	mΩ
$R_{DS(on),typ}$	V_{GS}=4.5V	9	mΩ
$I_{D\ (Sillicon\ Limited)}$		-15	A

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Part Number	Package	Marking
HTS075P03	SOIC-8	TS075P03

Absolute Maximum Ratings at T_j=25 (unless otherwise specified)

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	T_C=25	-15	A
		T_C=100	-11	
Drain to Source Voltage	V_{DS}	-	-30	V
Gate to Source Voltage	V_{GS}	-	±20	V
Pulsed Drain Current	I_{DM}	-	-60	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.1mH, T_C=25	31.25	mJ
Power Dissipation	P_D	T_A=25	3	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to175	

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	50	/W
Thermal Resistance Junction-Case	$R_{\theta JC}$	25	/W

Electrical Characteristics at T_j=25 (unless otherwise specified)

Static Characteristics

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250μA	-30	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=-250μA	-1.0	-2.0	-3.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=-24V, T_j=25	-	-	-1	μA
		V_{GS}=0V, V_{DS}=-20V, T_j=125	-	-	-10	
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Drain to Source on Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-12A	-	6	7.5	mΩ
		V_{GS}=-4.5V, I_D=-9A	-	9	12	
Transconductance	g_{fs}	V_{DS}=-5V, I_D=-12A	-	28	-	S
Gate Resistance	R_G	V_{GS}=15mV, V_{DS} =0V, f=1MHz	-	3	-	Ω

Dynamic Characteristics

Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-15V, f=1MHz	-	15545	-	pF
Output Capacitance	C_{oss}		-	3776	-	
Reverse Transfer Capacitance	C_{rss}		-	3507	-	
Total Gate Charge	Q_g (10V)	V_{DD}=-15V, I_D=-10A, V_{GS}=-10V	-	56	-	nC
	Q_g (4.5V)		-	35	-	
Gate to Source Charge	Q_{gs}		-	15	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	18	-	
Turn on Delay Time	$t_{d(on)}$	V_{DD}=-15V, I_D=-1A, V_{GS}=-10V, R_G=2.7Ω,	-	26	-	ns
Rise time	t_r		-	22	-	
Turn off Delay Time	$t_{d(off)}$		-	75	-	
Fall Time	t_f		-	15	-	

Reverse Diode Characteristics

Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_F=-3A	-		-1.2	V
Reverse Recovery Time	t_{rr}	I_F=-3.6A, dI_F/dt=100A/μs	-	52	-	ns
Reverse Recovery Charge	Q_{rr}		-	60	-	nC

Figure 7. Typic

Figure 9. Maximum Safe Operating Area

Figure 10. Sing

Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Ambient