

DIP Type MOSFET

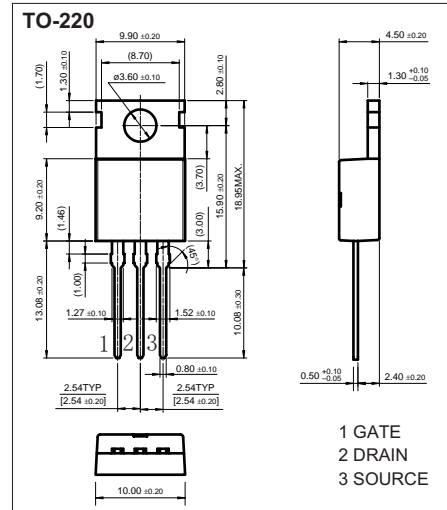
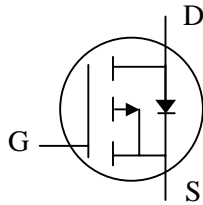
**P-Channel Enhancement MOSFET**  
**40P03**

**Features**

$V_{DS} (V) = -30V, I_D = -30 A$

$R_{DS(ON)} < 28m \quad (V_{GS} = -10V)$

$R_{DS(ON)} < 50m \quad (V_{GS} = -4.5V)$



**Absolute Maximum Ratings  $T_a = 25$**

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	-30	V	
Gate-Source Voltage	$V_{GS}$	$\pm 20$		
Continuous Drain Current	$I_D$	$T_C=25$	-30	A
		$T_C=100$	-18	
Pulsed Drain Current	$I_{DM}$	-120		
Power Dissipation	$P_D$	31.3	W	
Thermal Resistance Junction- to-Ambient	$R_{thJA}$	110	/W	
Thermal Resistance Junction- to-Case	$R_{thc}$	4		
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to 150		

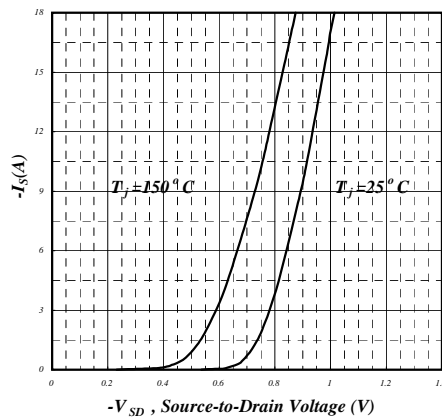
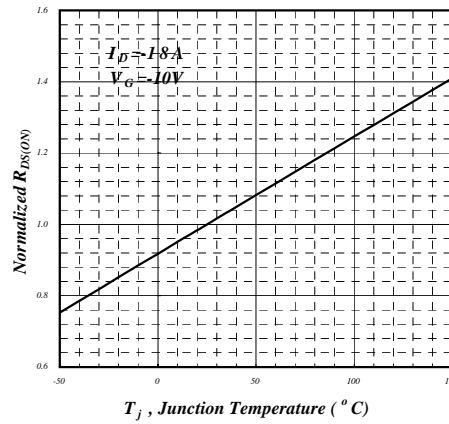
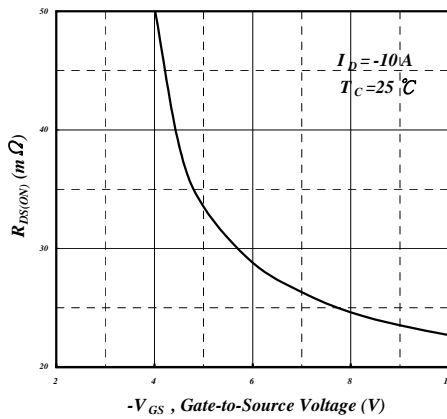
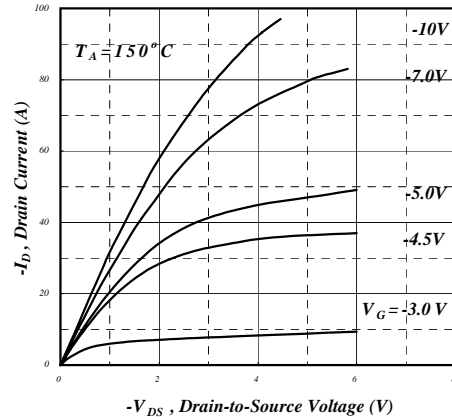
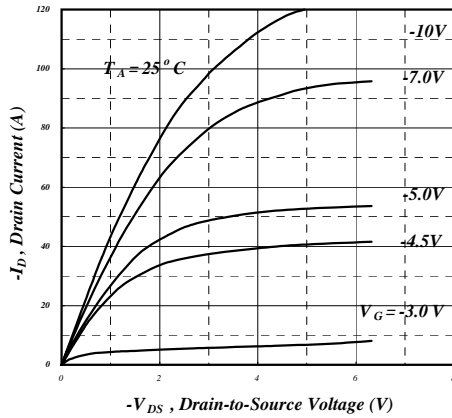
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Electrical Characteristics Ta = 25

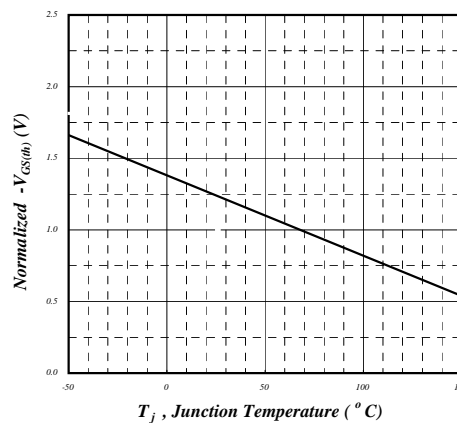
Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =-250 μA, V <sub>GS</sub> =0V	-30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V			-1	μA
		V <sub>DS</sub> =-24V, V <sub>GS</sub> =0V, T <sub>J</sub> =150			-25	
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250 μA	-1		-3	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-18A			28	m
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-10A			50	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-18A		20		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-25V, f=1MHz		915	1465	pF
Output Capacitance	C <sub>oss</sub>			280		
Reverse Transfer Capacitance	C <sub>rss</sub>			195		
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-24V, I <sub>D</sub> =-18A		14	22	nC
Gate Source Charge	Q <sub>gs</sub>			3		
Gate Drain Charge	Q <sub>gd</sub>			9		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-15V, R <sub>D</sub> =0.8 Ω, R <sub>G</sub> =3.3 Ω, I <sub>D</sub> =-18A		12		ns
Turn-On Rise Time	t <sub>r</sub>			56		
Turn-Off DelayTime	t <sub>d(off)</sub>			30		
Turn-Off Fall Time	t <sub>f</sub>			57		
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>S</sub> =-18A, dI/dt=-100A/μs		30		
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>	I <sub>S</sub> =-18A, dI/dt=-100A/μs		21		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-18A, V <sub>GS</sub> =0V			-1.2	V

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## Typical Characteristics



### v.s. Junction Temperature



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■ Typical Characteristics

