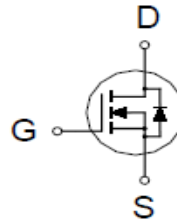
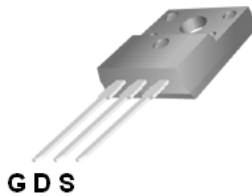


P0925BTF

N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
250V	420mΩ @ $V_{GS} = 10V$	9A



TO-220F

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ °C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMITS	UNITS
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	$T_C = 25\text{ °C}$	9
		$T_C = 100\text{ °C}$	5.4
Pulsed Drain Current ¹	I_{DM}	36	A
Avalanche Current	I_{AS}	12	
Avalanche Energy	E_{AS}	72	mJ
Power Dissipation	P_D	$T_C = 25\text{ °C}$	30
		$T_C = 100\text{ °C}$	12
Operating Junction & Storage Temperature Range	T_J, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		4.2	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

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ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

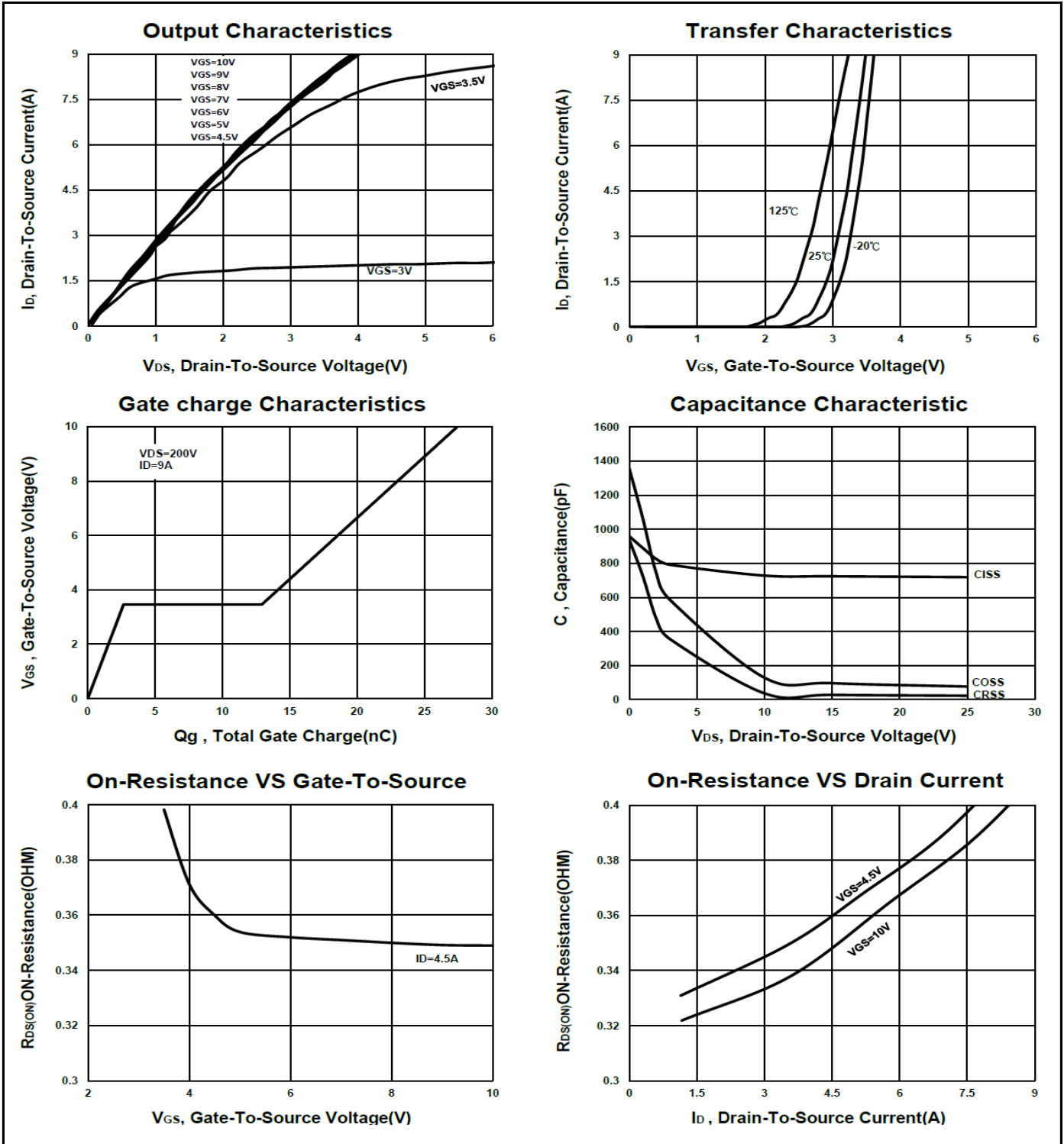
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	250			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.5	2	3.5	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 250V, V _{GS} = 0V			1	μA
		V _{DS} = 200V, V _{GS} = 0V, T _J = 125 °C			10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 4.5A		360	480	mΩ
		V _{GS} = 10V, I _D = 4.5A		350	420	
Forward Transconductance ¹	g _{fs}	V _{DS} = 10V, I _D = 4.5A		15		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		721		pF
Output Capacitance	C _{oss}			76		
Reverse Transfer Capacitance	C _{rss}			23		
Total Gate Charge ²	Q _g (V _{GS} =10V)	V _{DS} = 200V, V _{GS} = 10V, I _D = 9A		28		nC
	Q _g (V _{GS} =4.5V)			15		
Gate-Source Charge ²	Q _{gs}			3		
Gate-Drain Charge ²	Q _{gd}			12		
Turn-On Delay Time ²	t _{d(on)}		V _{DD} = 125V, I _D ≅ 9A, V _{GS} = 10V, R _{GEN} = 6Ω		13	
Rise Time ²	t _r			36		
Turn-Off Delay Time ²	t _{d(off)}			46		
Fall Time ²	t _f			52		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				9	A
Forward Voltage ¹	V _{SD}	I _F = 9A, V _{GS} = 0V			1.6	V
Reverse Recovery Time	t _{rr}	I _F =9A, dI _F /dt = 100A / μS		160		nS
Reverse Recovery Charge	Q _{rr}				850	

¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

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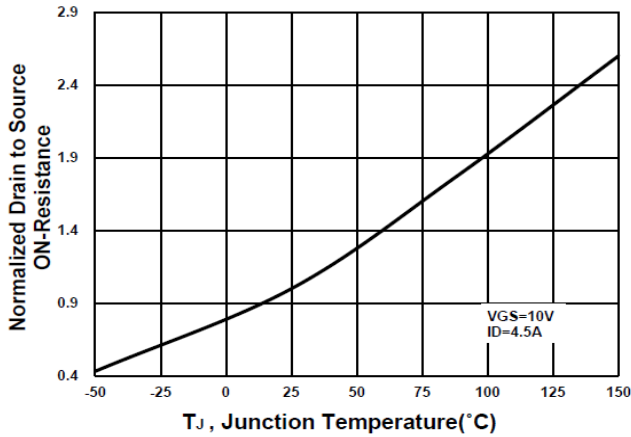
N-Channel Enhancement Mode MOSFET



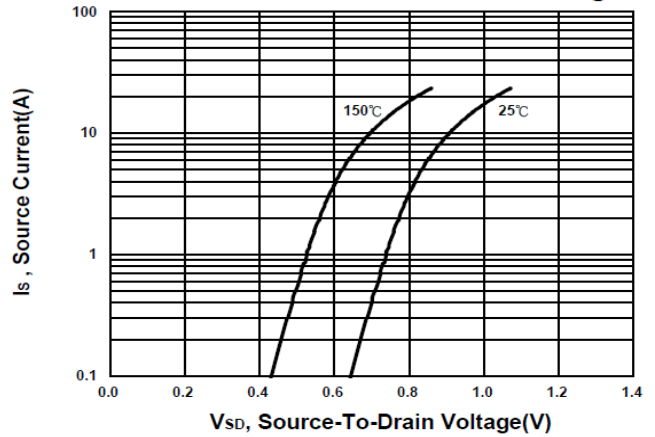
P0925BTF

N-Channel Enhancement Mode MOSFET

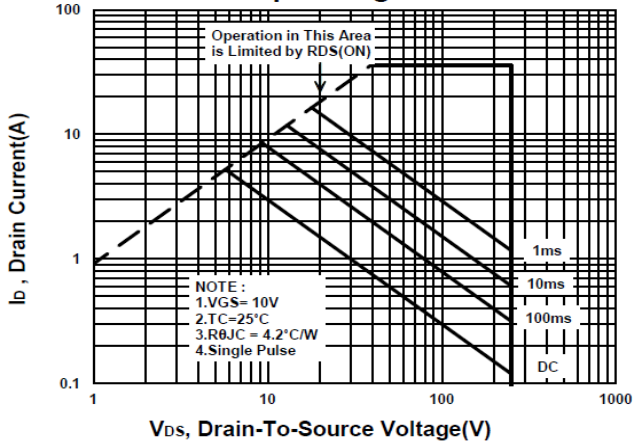
On-Resistance VS Temperature



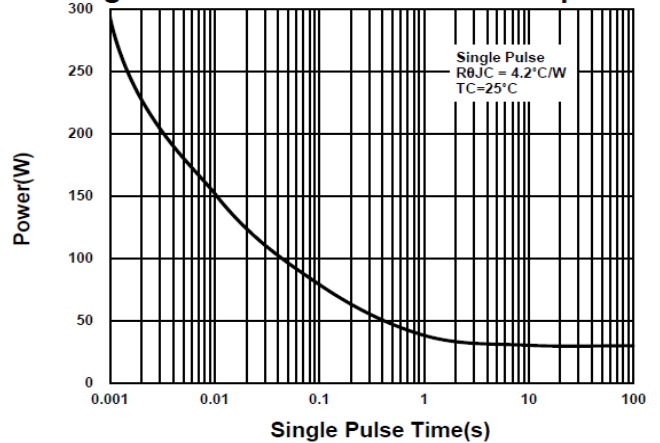
Source-Drain Diode Forward Voltage



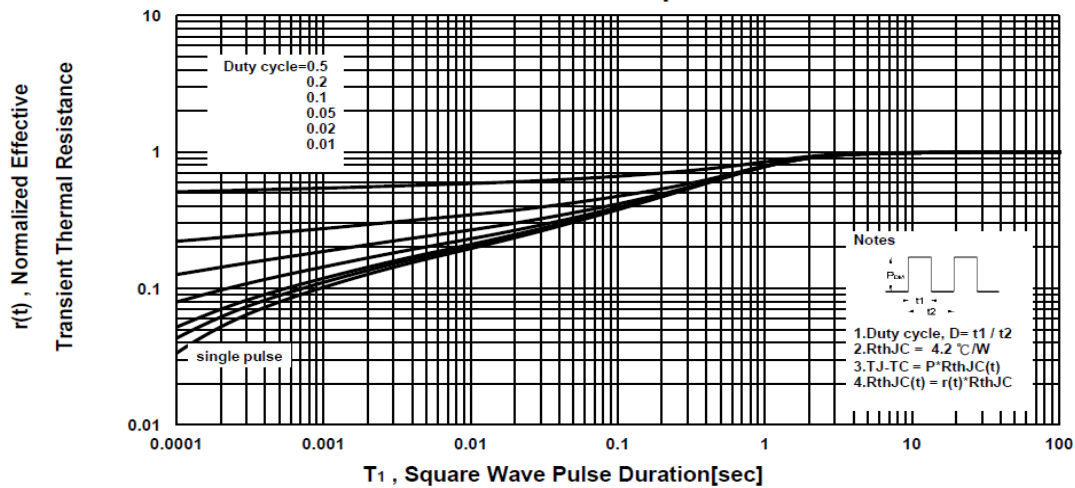
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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Package Dimension

TO-220F (3-Lead) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.2		4.93	e	2.05	2.55	3.05
A1	2.34		3.1	F	27.45		30.6
B	17.77		20.3	G	7.72		9.3
b	0.6		1.05	H	6.1		7.1
b1	0.9	1.23	1.62	L	12.5		14.5
b2	0.6		1.9	L1	1.97		3.8
c	0.4		1.0	P	2.98		3.4
D	14.7		16.4	Q	2.1		2.96
D1	6.4		7.5	q	3.0		3.8
E	9.7		10.4				

