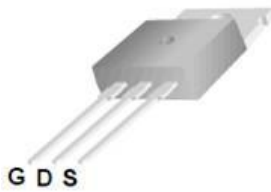


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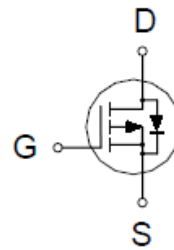
P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-40V	16m Ω @ $V_{GS} = -10V$	-65A



TO-220



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	-40	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current ²	$T_C = 25\text{ }^\circ\text{C}$	I_D	-65	A
	$T_C = 100\text{ }^\circ\text{C}$		-42	
Pulsed Drain Current ^{1,2}		I_{DM}	-120	
Avalanche Current		I_{AS}	-46	
Avalanche Energy	$L = 0.1\text{ mH}$	E_{AS}	107	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	104	W
	$T_C = 100\text{ }^\circ\text{C}$		41	
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		1.2	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Limited only by maximum temperature allowed.

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P-Channel Enhancement Mode MOSFET

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

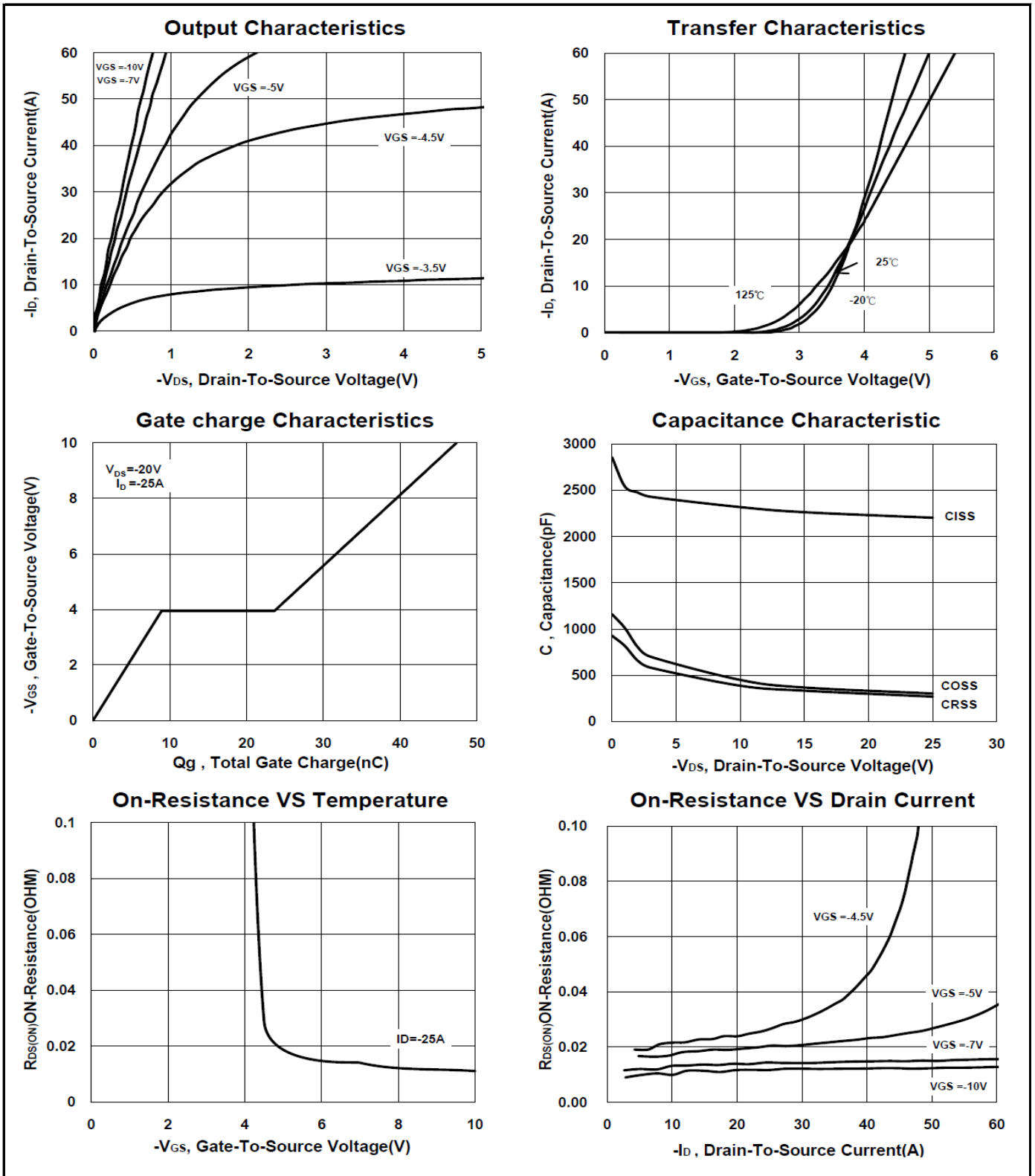
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-40			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1.5	-2.2	-3	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -32V, V _{GS} = 0V			1	μA
		V _{DS} = -30V, V _{GS} = 0V, T _J = 70 °C			10	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = -5V, V _{GS} = -10V	-120			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = -10V, I _D = -25A		12	16	mΩ
		V _{GS} = -7V, I _D = -15A		14	20	
Forward Transconductance ¹	g _{fs}	V _{DS} = -10V, I _D = -25A		29		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -15V, f = 1MHz		2229		pF
Output Capacitance	C _{oss}			334		
Reverse Transfer Capacitance	C _{rss}			293		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		4.3		Ω
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} , I _D = -25A, V _{GS} = -10V		48		nC
Gate-Source Charge ²	Q _{gs}			9		
Gate-Drain Charge ²	Q _{gd}			15		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 0.5V _{(BR)DSS} , I _D ≅ -25A, V _{GS} = -10V, R _{GEN} = 6Ω		15		nS
Rise Time ²	t _r			43		
Turn-Off Delay Time ²	t _{d(off)}			62		
Fall Time ²	t _f			50		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS						
Continuous Current	I _S				-65	A
Forward Voltage ¹	V _{SD}	I _F = -25A, V _{GS} = 0V			-1.3	V
Reverse Recovery Time	t _{rr}	I _F = -25A, di _F /dt = 100A / μS		27		nS
Reverse Recovery Charge	Q _{rr}				16	

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

²Independent of operating temperature.

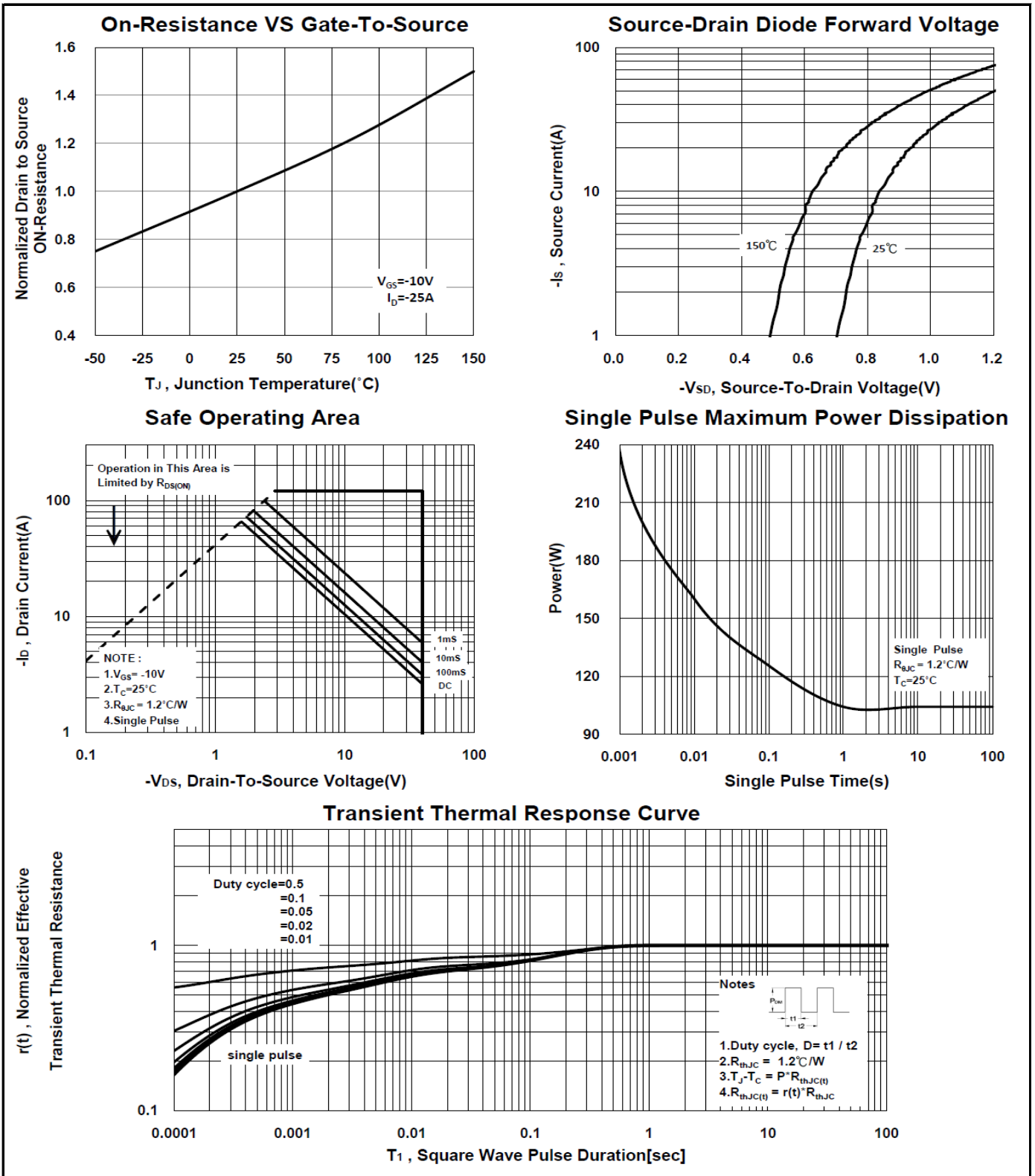
P1604ET

P-Channel Logic Level Enhancement Mode MOSFET



P1604ET

P-Channel Logic Level Enhancement Mode MOSFET



P1604ET
P-Channel Logic Level Enhancement Mode MOSFET

TO-220 (3-Lead) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	9.8	11.5		H	2.04	2.54	3.04
B	2.59	2.79	2.99	I	1.17	1.27	1.47
C	19.05	19.35	19.65	J	4.24	4.44	4.8
D	27.67	29	29.8	K	1.11	1.26	1.45
E	14.7	15	15.75	L	2.59		2.8
F	8.4	8.6	9.25	M	0.34	0.5	0.6
G	0.66	0.76	1.0	N			

