

Features:

7.0A, 650V, $R_{DS(on)}(T_c) = 1.2 @ V_{GS}=10V$

Low Gate Charge

Low C_{iss}

100% Avalanche T

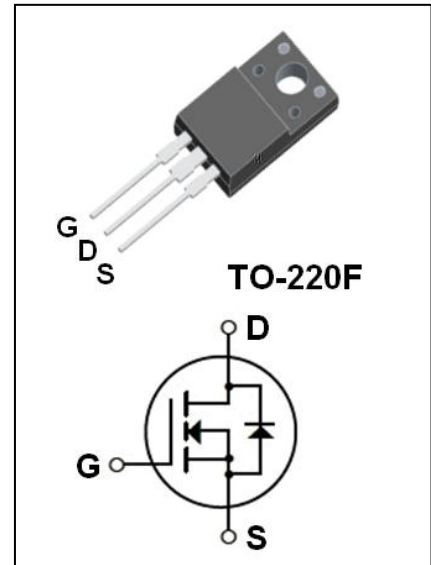
Fast

Low $r_{DS(on)}$ / C_{oss}

Application:

High Frequency Switching MOSFET

Automotive Power Factor Correction



Absolute Maximum Ratings($T_c = 25^\circ C$)

Symbol	Parameter	Value	Unit
V_{DSS}	Drain-Source Voltage (GS=0V)	650	V
I_D	Drain Current (Continuous, $V_{GS}=10V$)	($T_c = 25^\circ C$)	7.0*
		($T_c = 100^\circ C$)	4.5*
I_{DM}	Drain Current (Peak)	28*	A
V_{GSS}	Gate-Source Voltage	± 30	V
E_{AS}	Single Pulse Avalanche Energy	590	J
I_{AR}	Average Reverse Current	7.0	A
E_{AR}	Reverse Avalanche Energy	14.0	J
$r_{DS(on)}$	Drain-Source Resistance	4.5	$^\circ C/W$
P_D	Power Dissipation ($T_c = 25^\circ C$)	48	W
		0.38	$W/^\circ C$
T_j	Operating Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature Range	-55 ~ +150	$^\circ C$

* Data in parentheses is limited by $r_{DS(on)}$ and T_c .

Thermal Characteristics

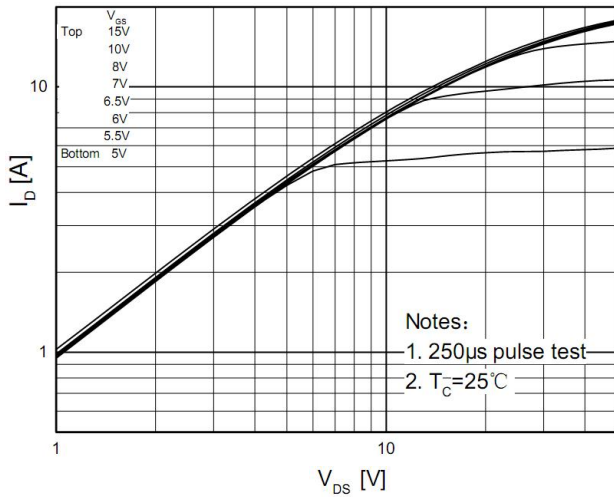
Symbol	Parameter	Value	Unit
R_{JC}	Junction to Case Thermal Resistance	2.6	$^\circ C/W$
R_{JA}	Junction to Ambient Thermal Resistance	62.5	$^\circ C/W$

Electrical Characteristics(T =25°C)

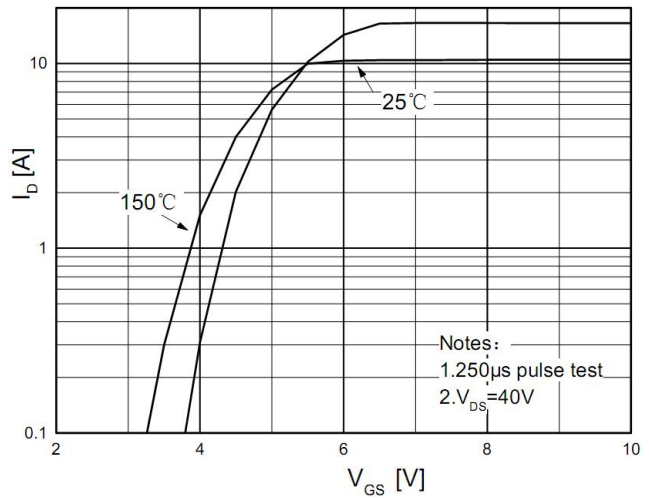
S	Pa a	T C	M	T	Ma	U
Off Characteristics						
BV _{DSS}	D a - B a V a	V _{GS} =0V, I _D =250 A	650	--	--	V
ΔBV _{DSS} / ΔT _J	B a V a T a	I _D =250 A (R 25°C)	--	0.7	--	V/°C
I _{DSS}	Z Ga V a D a C	V _{DS} =650V, V _{GS} =0V	--	--	1	A
		V _{DS} =520V, T =125°C	--	--	10	A
I _{GSSF}	Ga -B L a a C ,F a	V _{GS} =+30V, V _{DS} =0V	--	--	100	A
I _{GSSR}	Ga -B L a a C ,R	V _{GS} =-30V, V _{DS} =0V	--	--	-100	A
On Characteristics						
V _{GS()}	Ga T V a	V _{DS} = V _{GS} , I _D =250 A	2.0	--	4.0	V
R _{DS()}	S a D a -S O -R a	V _{GS} =10 V, I _D =3.5A	--	1.2	1.4	
f _{FS}	F a T a a	V _{DS} =40 V, I _D =3.5A (N 4)	--	6.5	--	S
Dynamic Characteristics						
C	I Ca a a	V _{DS} =25V, V _{GS} =0V, =1.0MH	--	1380	--	F
C	O Ca a a		--	170	--	F
C	R T a Ca a a		--	15	--	F
Switching Characteristics						
()	T -O D a T	V _{DD} = 325 V, I _D = 7.0 A, R _G = 25 (N 4,5)	--	13	--	
()	T -O R T		--	100	--	
()	T -O D a T		--	126	--	
()	T -O Fa T		--	48	--	
Q	T a Ga C a	V _{DS} = 520 V, I _D =7.0 A, V _{GS} = 10 V (N 4,5)	--	30	--	C
Q	Ga -S C a		--	6	--	C
Q	Ga -D a C a		--	14	--	C
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Ma C D a -S D F a C		--	--	7.0	A
I _{SM}	Ma P D a -S D F a C		--	--	28	A
V _{SD}	D a -S D F a V a	V _{GS} =0V, I _S =7.0A	--	--	1.4	V
Q	R R T	V _{GS} =0V, I _S =7.0A, I _F / =100A/ (N 4)	--	315	--	
	R R C a		--	2.6	--	C

- N :
- 1、R Ra :P W L Ma J T a .
 - 2、L = 19.5 H, I_{AS} =7.0A, V_{DD} = 50V, R_G = 25 , S a T_J = 25°C.
 - 3、I_{SD} 7.0A, / 200A/ , V_{DD} BV_{DSS}, S a T_J = 25°C.
 - 4、P T :P W 300 ,D C 2%.
 - 5、E a l O a T a .

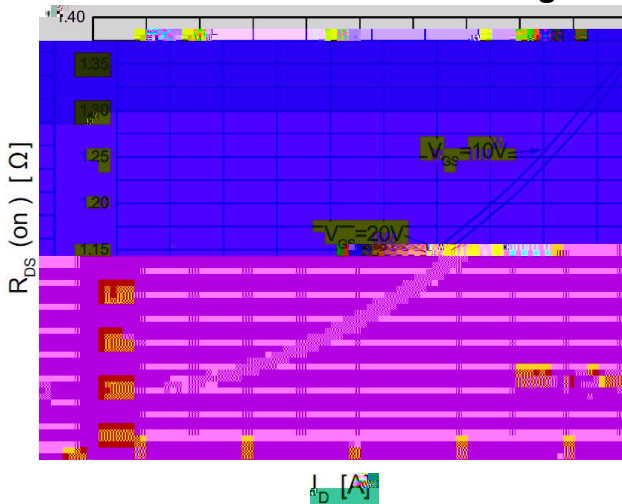
On-Regin Characteristics



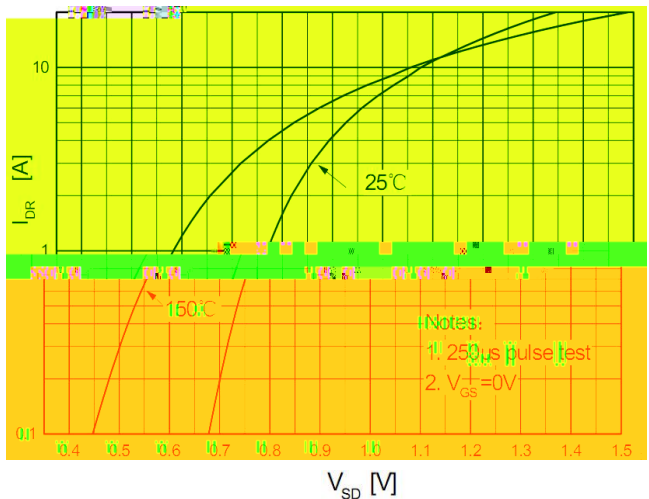
Transfer Characteristics



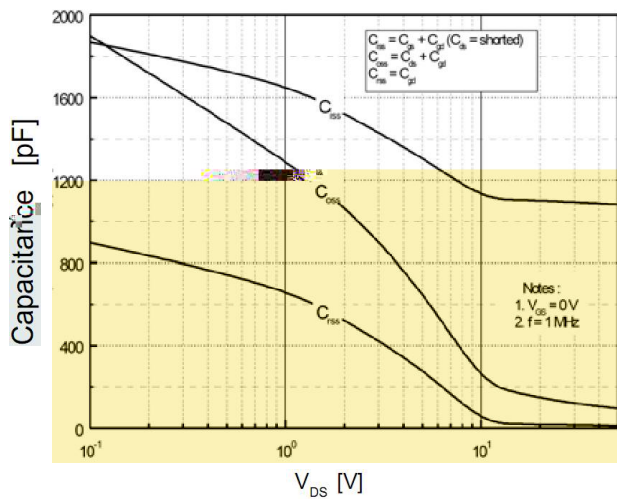
On-Resistance Variation vs. Drain Current and Gate Voltage



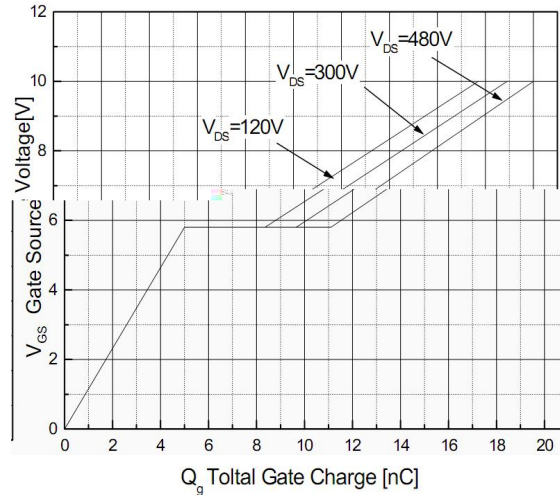
Body Diode Forward Voltage Variation vs. Source Current and Temperature



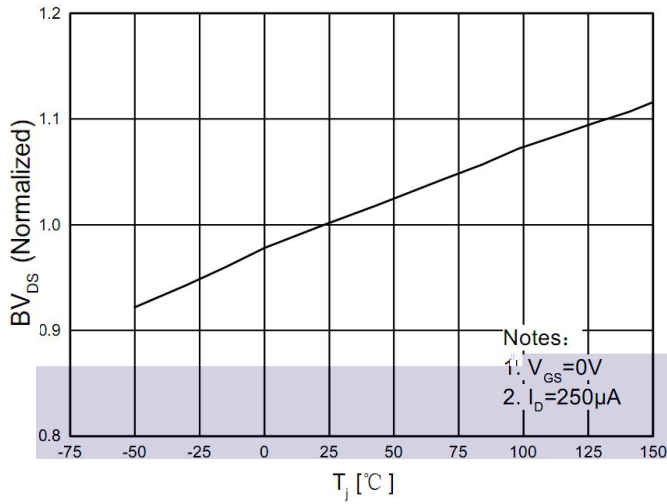
Capacitance Characteristics



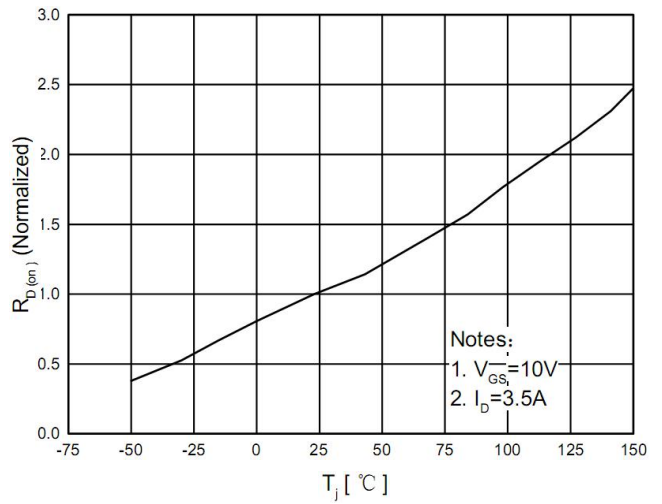
Gate Charge Characteristics



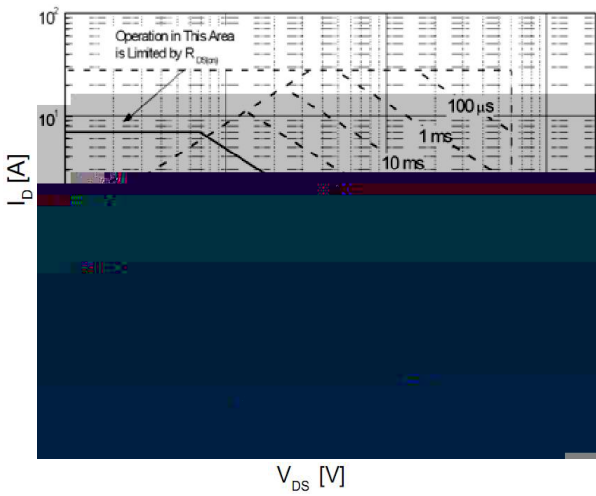
Breakdown Voltage Variation vs. Temperature



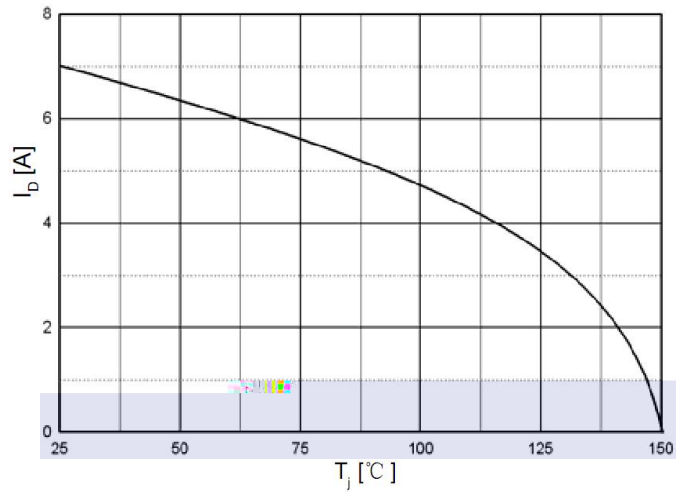
On-Resistance Variation vs. Temperature



Maximum Safe Operating Area



Maximum Drain Current Vs. Case Temperature



TO-220F Package Dimensions

UNIT:

SYMBOL			a	SYMBOL		a
A	9.80		10.60	D	2.54	
A1		7.00		D1	1.15	1.55
A2	2.90		3.40	D2	0.60	1.00
A3	9.10		9.90	D3	0.20	0.50
B1	15.40		16.40	E	2.24	2.84
B2	4.35		4.95	E1		0.70
B3	6.00		7.40	E2		1.0 × 45°
C	3.00		3.70	E3	0.35	0.65
C1	15.00		17.00	E4	2.30	3.30
C2	8.80		10.80			30°

