

Features

- Low gate charge
 - Improved dv/dt capability
 - RoHS compliant
 - JEDEC Qualification
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Absolute Maximum Ratings

Electrical Characteristics : $T_c=25^\circ\text{C}$, unless otherwise noted

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
OFF						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{\text{GS}} = 0 \text{ V}, I_{\text{D}} = 250 \mu\text{A}$	800	--	—	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{\text{DS}} = 800 \text{ V}, V_{\text{GS}} = 0 \text{ V}$	--	--	10	μA
		$V_{\text{DS}} = 640 \text{ V}, T_c = 125^\circ\text{C}$	--	--	100	μA
Forward Gate-Source Leakage Current	I_{GSSF}	$V_{\text{GS}} = 30 \text{ V}, V_{\text{DS}} = 0 \text{ V}$	--	--	100	nA
Reverse Gate-Source Leakage Current	I_{GSSR}	$V_{\text{GS}} = -30 \text{ V}, V_{\text{DS}} = 0 \text{ V}$	--	--	-100	nA
ON						
Gate Threshold Voltage	$V_{\text{GS(th)}}$	$V_{\text{DS}} = V_{\text{GS}}, I_{\text{D}} = 250 \mu\text{A}$	2	--	4	V
Drain-Source On-Resistance	$R_{\text{DS(on)}}$	$V_{\text{GS}} = 10 \text{ V}, I_{\text{D}} = 3.5 \text{ A}$	--	1.59	1.9	
Forward Transconductance ^(Note 4)	g_{FS}	$V_{\text{DS}} = 30 \text{ V}, I_{\text{D}} = 3.5 \text{ A}$	--	8	--	S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{\text{DS}} = 25 \text{ V}, V_{\text{GS}} = 0 \text{ V}, D168/\text{Lang} (\text{en-})$	$f = 1.0 \text{ MHz}$	BT1-0 0 1 450	BTDC	415.1 T
Output Capacitance	C_{oss}					
Reverse Transfer Capacitance	C_{rss}					
SWITCHING						
Turn-On Delay Time ^(Note 4,5)	$t_{\text{d(on)}}$	$V_{\text{DD}} = 150.17 \text{ } 349.46 \text{ Tm}$	$(\text{ID } 150.17 \text{ } 349.47.13 \text{ Tc}[(--)])$	BTDC 567.18 T2r		

Note :

- Repeated rating : Pulse width limited by safe operating area
- $L=8.7\text{mH}, I_{AS} = 7\text{A}, V_{DD} = 50\text{V}, R_G = 25\Omega$, Starting $T_J = 25^\circ\text{C}$, not subject to production test verified by design/characterization
- $I_{SD} = 7\text{A}, dI/dt = 10\text{A}/\mu\text{s}$, $V_{DD} = 50\text{V}$, Starting $T_J = 25^\circ\text{C}$
- Essentially Independent of Operating Temperature Typical Characteristics

Fig. 1 Output Characteristics

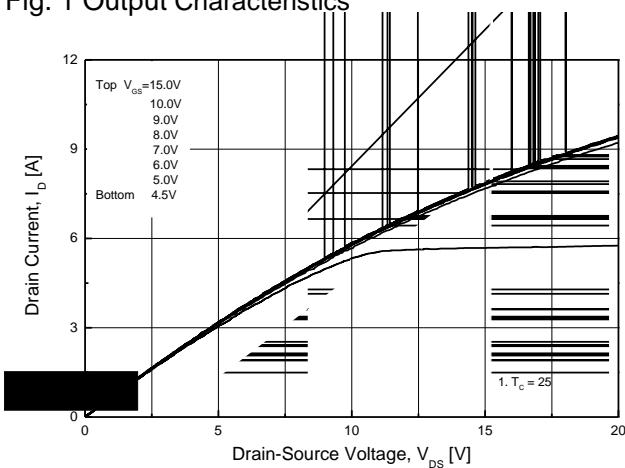


Fig. 2 Transfer Characteristics

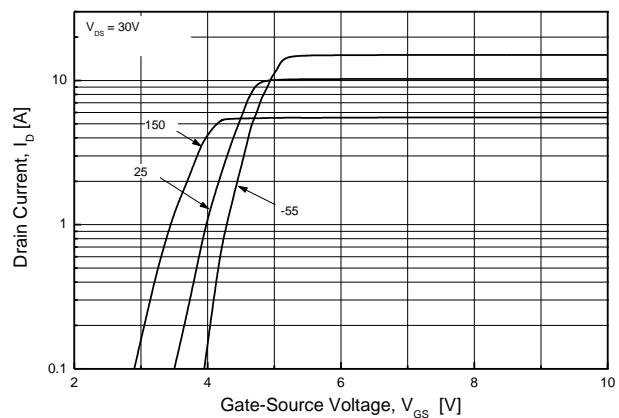


Fig. 3 On-Resistance vs.
Drain Current and Gate voltage

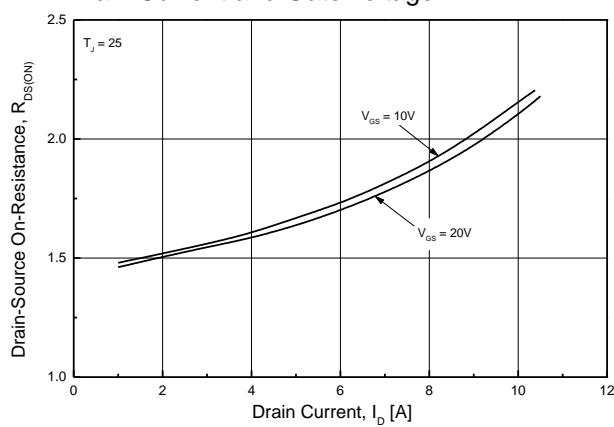


Fig. 4 Body Diode Forward Voltage vs.
Source Current and Temperature

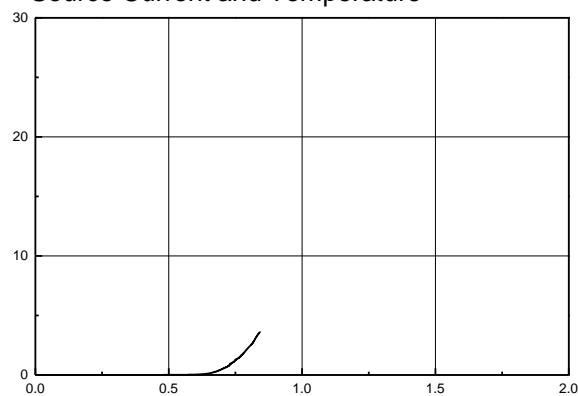


Fig. 5 Capacitance Characteristics

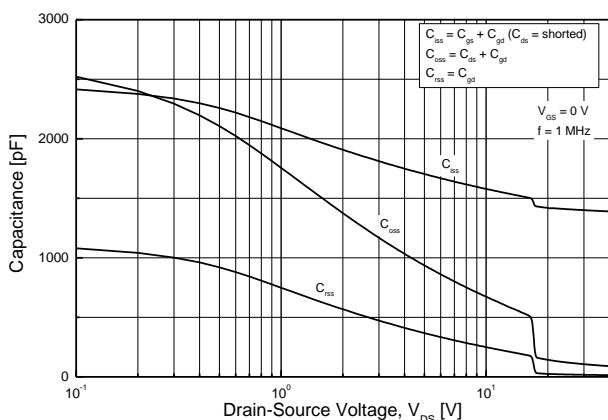
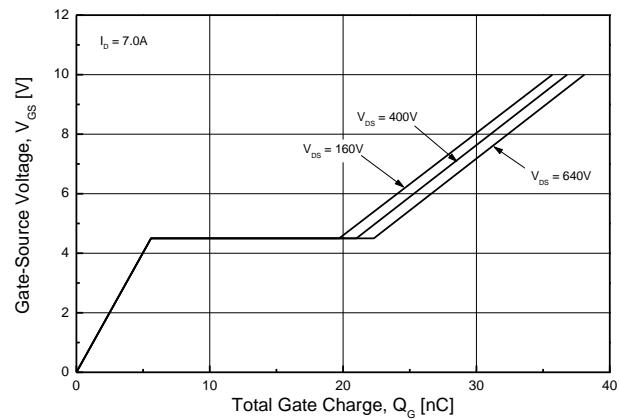
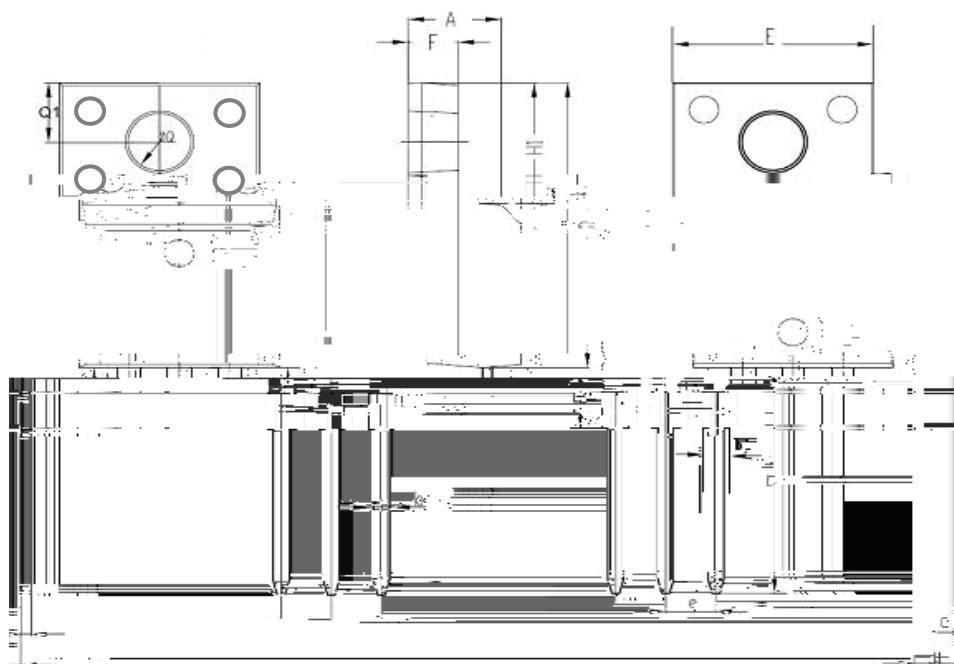


Fig. 6 Gate Charge Characteristics



TO-220F-3L MECHANICAL DATA



SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN	MAX	MIN	MAX	
A	0.178	0.194	4.53	4.93	
b	0.028	0.036	0.71	0.91	
C	0.018	0.024	0.45	0.60	
D	0.617	0.633	15.67	16.07	
E	0.392	0.408	9.96	10.36	
e	0.100 TYP.		2.54TYP.		
H1	0.256	0.272	6.50	6.90	
J1	0.101	0.117	2.56	2.96	
L	0.503	0.519	12.78	13.18	
	0.117	0.133	2.98	3.38	
b1	0.045	0.055	1.15	1.39	
L1	0.114	0.130	2.9	3.3	
Q1	0.122	0.138	3.10	3.50	
F	0.092	0.108	2.34	2.74	

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