

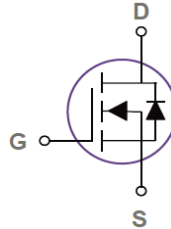
## N-Channel Enhancement Power MOSFET

### Features

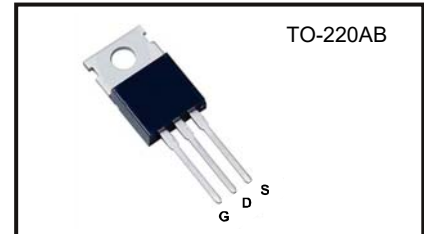
- Low ON Resistance
- Low Reverse transfer capacitances
- 100% Single Pulse avalanche energy Test

### Applications

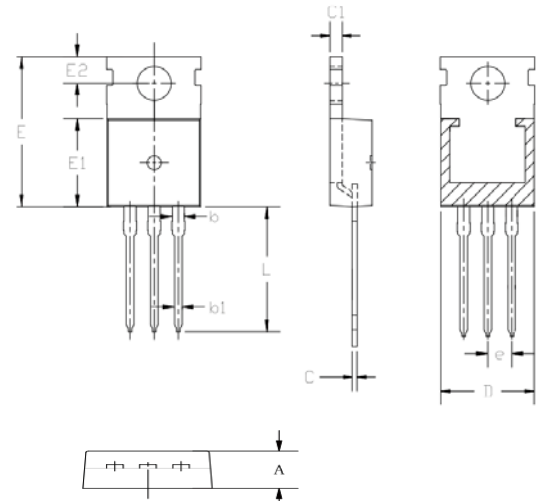
- Power switching application
- Adapter and charger



$V_{DSS}$	100V
$I_D(@25^{\circ}C)$	155A
$R_{DS(ON)}$ typ.	4.3m $\Omega$



Package Dimensions



### Absolute Maximum Ratings

( $T_a = 25^{\circ}C$  unless otherwise specified)

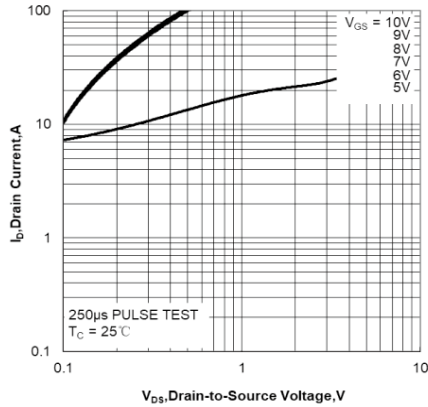
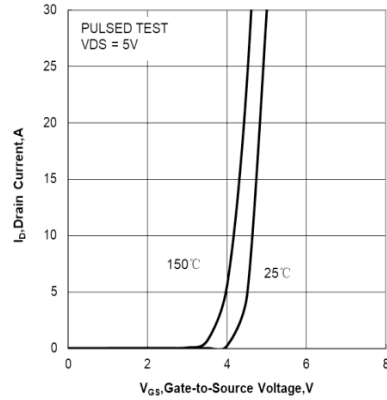
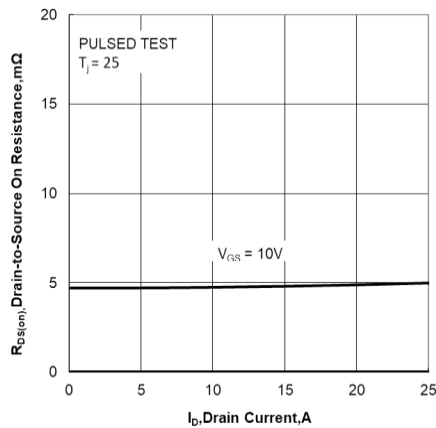
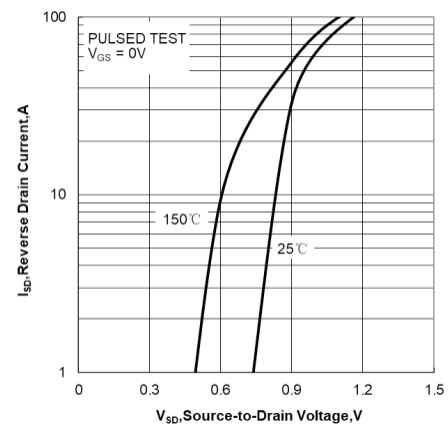
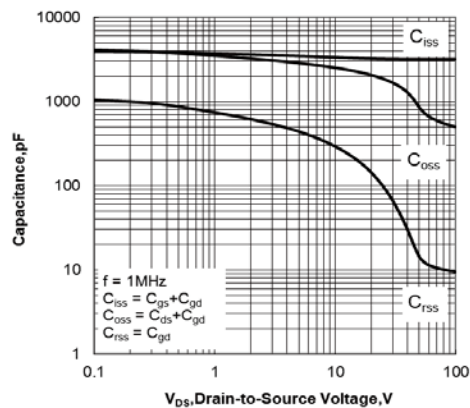
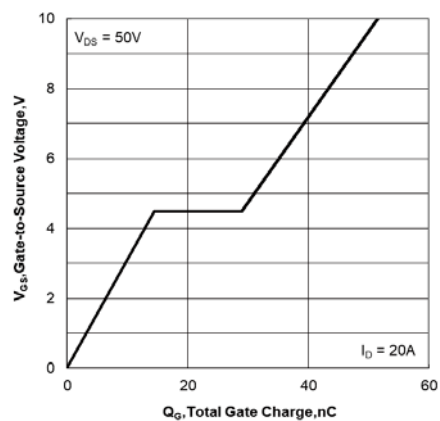
Parameter	Symbol	Ratings	Unit
Drain Source Voltage	$V_{DS}$	100	V
Gate Source Voltage @ $T_c = 25^{\circ}C$	$V_{GS}$	$\pm 20$	V
Drain Current Continuous @ $T_c = 25^{\circ}C$ @ $T_c = 100^{\circ}C$	$I_D$	155 98	A
Drain Current Pulsed	$I_{DM}$	620	A
Single Pulse Avalanche Energy	$E_{AS}$	676	mJ
Power Dissipation @ $T_c = 25^{\circ}C$	$P_D$	156	W
Storage Temperature Range	$T_{STG}$	-55 to +150	$^{\circ}C$
Operating Junction Temperature Range	$T_J$	-55 to +150	$^{\circ}C$
Thermal Resistance Junction to Case	$R_{\theta Jc}$	0.8	$^{\circ}C/W$

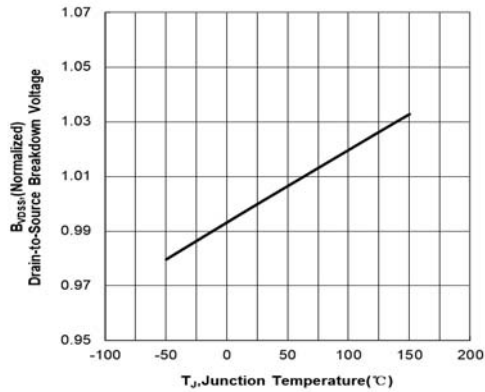
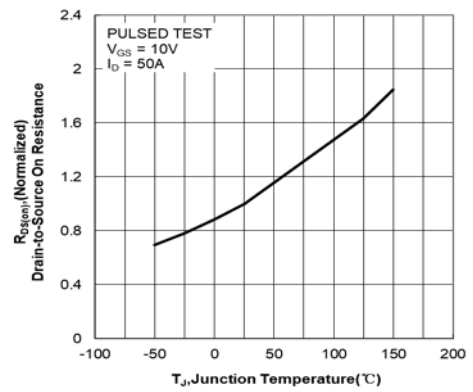
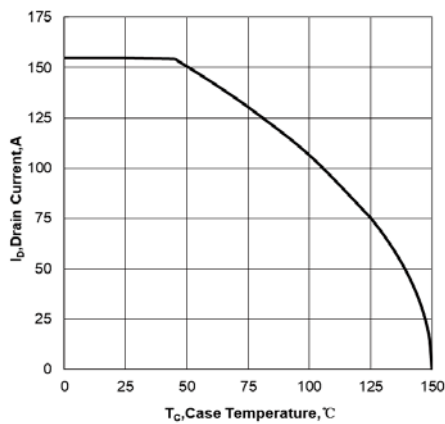
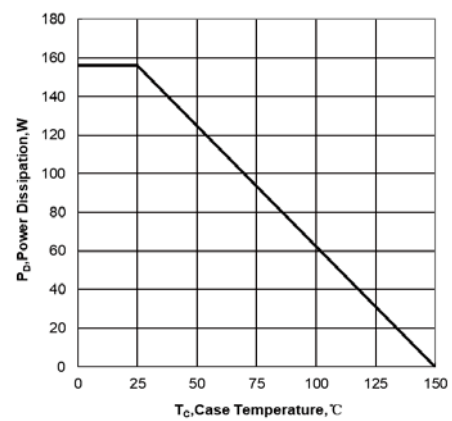
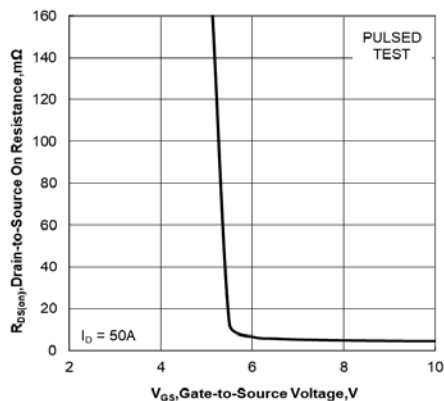
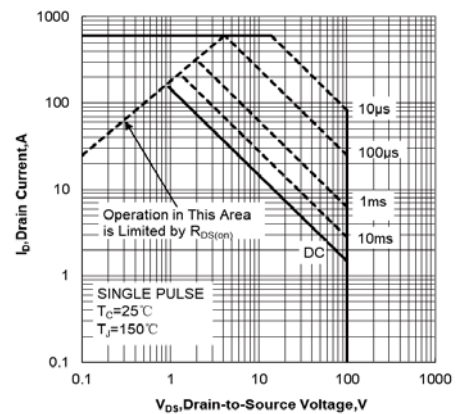
SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	4.40	--	4.60
b	1.20	--	1.36
b1	0.70	--	0.90
C	0.48	--	0.53
C1	1.28	--	1.32
D	9.80	10.00	10.20
E	15.20	15.45	15.75
E1	9.00	9.20	9.40
E2	2.60	--	2.90
e	--	2.54	--
L	13.00	--	13.40

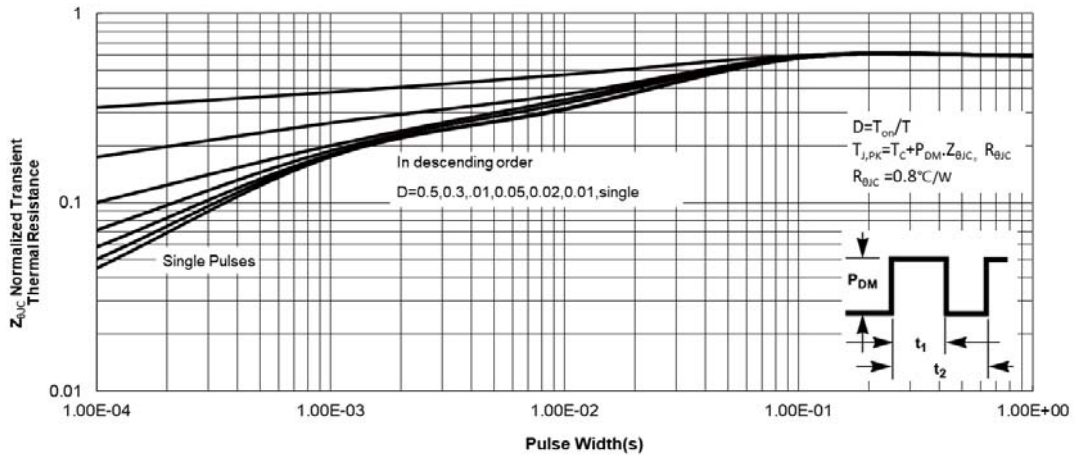
**Electrical Characteristics @  $T_J = 25^\circ\text{C}$  (unless otherwise specified)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>OFF Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS} = 0V, I_{DS} = 0.25mA$	100	-	-	V
Drain-to-Source Leakage Current	$I_{DSS}$	$V_{GS} = 0V, V_{DS} = 80V$	-	-	1	$\mu A$
Gated to Source Forward Leakage	$I_{GSS(F)}$	$V_{GS} = +20V$	-	-	100	$\mu A$
Gated to Source Reverse Leakage	$I_{GSS(R)}$	$V_{GS} = 20V$	-	-	-100	nA
<b>ON Characteristics</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 0.25mA$	2.0	3.2	4.0	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 50A$	-	4.3	5.1	m $\Omega$
Transconductance	$g_{fs}$	$V_{DS} = 10V, I_D = 10A$	-	35.7	-	S
Gate Resistance	$R_g$	$V_{DS} = V_{GS} = 0V, f = 1MHz$	-	2	-	$\Omega$
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 50V$	-	3153	-	pF
Output Capacitance	$C_{oss}$	$V_{GS} = 0V$	-	842	-	
Reverse Transfer Capacitance	$C_{rss}$	Freq. = 1.0MHz	-	14	-	
<b>Switching Characteristics</b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{DS} = 50V$ $I_D = 20A$ $R_G = 3\Omega$ $V_{GS} = 10V$	-	13.5	-	ns
Rise Time	$t_r$		-	15.7	-	
Turn-Off Delay Time	$t_{d(off)}$		-	28	-	
Fall Time	$t_f$		-	13.8	-	
Total Gate Charge	$Q_g$	$V_{DS} = 50V$	-	51.5	-	nC
Gate to Source Charge	$Q_{gs}$	$V_{GS} = 10V$	-	14.4	-	
Gate to Drain Charge	$Q_{gd}$	$I_D = 20A$	-	14.5	-	
<b>Body Diode Characteristics</b>						
Continuous source-drain diode current	$I_{SD}$		-	-	155	A
Diode Forward Voltage	$V_{SD}$	$V_{GS} = 0V, I_S = 50A$	-	0.9	1.2	V
Reverse Recovery Time	$T_{rr}$	$I_{SD} = 20A$	-	54.8	-	ns
Reverse Recovery Charge	$Q_{rr}$	$di/dt = 100A/\mu s$	-	61.6	-	nC

\*Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$

**Typical Performance Characteristics**
**Figure 1. Output Characteristics**

**Figure 2. Transfer Characteristics**

**Figure 3. Drain-to-Source On Resistance vs Drain Current**

**Figure 4. Body Diode Forward Voltage vs Source Current and Temperature**

**Figure 5. Capacitance Characteristics**

**Figure 6. Gate Charge Characteristics**


**Typical Performance Characteristics**
**Figure 7. Normalized Breakdown Voltage vs Junction Temperature**

**Figure 8. Normalized On Resistance vs Junction Temperature**

**Figure 9. Maximum Continuous Drain Current vs Case Temperature**

**Figure 10. Maximum Power Dissipation vs Case Temperature**

**Figure 11. Drain-to-Source On Resistance vs Gate Voltage and Drain Current**

**Figure 12. Maximum Safe Operating Area**


**Typical Performance Characteristics**
**Figure 13. Maximum Effective Transient Thermal Impedance, Junction-to-Case**


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