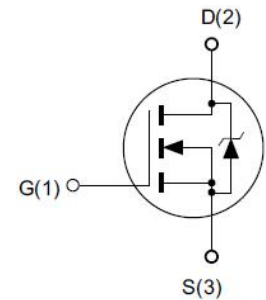
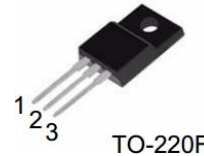


Features

- ◆ 700V, 8A, $R_{DS(ON)}(Typ.) = 0.54\Omega @ V_{GS} = 10V$
- ◆ Advanced Super Junction Technology
- ◆ Easy to Control Gate Switching
- ◆ 100% Avalanche Tested

Application

- ◆ PD Adaptor
- ◆ LED lighting
- ◆ LCD & PDP TV
- ◆ Single-ended flyback or two-transistor forward topologies



Absolute Maximum Ratings $T_c = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Rating	Unit
V_{DS}	Drain-Source Voltage ^a	700	V
V_{GS}	Gate-Source Voltage	± 30	
I_D	Drain Current-Continuous, $T_c = 25^\circ\text{C}$	8	A
I_{DM}	Drain Current-Pulsed ^b	24	
P_D	Maximum Power Dissipation @ $T_J = 25^\circ\text{C}$	26	W
dv/dt	Peak Diode Recovery dv/dt ^c	15	V/ns
E_{AS}	Single Pulsed Avalanche Energy ^d	180	mJ
T_J, T_{STG}	Operating and Store Temperature Range	150, -55 to 150	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Thermal Resistance, Junction to Case	4.8	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	80	

Electrical Characteristics $T_J = 25^\circ\text{C}$ unless otherwise noted

■ Off Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	700	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 700V, V_{GS} = 0V$	-	-	1	μA
I_{GSS}	Forward Gate Body Leakage Current	$V_{DS} = 0V, V_{GS} = \pm 30V$	-	-	± 100	nA

■ On Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.8	-	4.2	V
$R_{DS(on)}$	Static Drain-Source On-Resistance ^c	$V_{GS} = 10V, I_D = 3.0 A$	-	0.54	0.60	Ω

■ Dynamic Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
R_G	Gate Resistance	$f = 1.0MHz$	-	24	-	Ω
C_{iss}	Input Capacitance	$V_{DS} = 50V,$ $V_{GS} = 0V,$ $f = 10kHz$	-	599	-	pF
C_{oss}	Output Capacitance		-	76	-	
C_{rss}	Reverse Transfer Capacitance		-	3.55	-	

■ On Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 400V,$ $V_{GS} = 13V,$ $I_D = 3A,$ $R_G = 6.8\Omega$	-	26.8	-	ns
t_r	Turn-On Rise Time		-	24.8	-	
$t_{d(off)}$	Turn-Off Delay Time		-	127.6	-	
t_f	Turn-Off Fall Time		-	21.2	-	
Q_g	Total Gate Charge	$V_{DD} = 400V,$ $V_{GS} = 0 \text{ to } 10V,$ $I_D = 3A$	-	8	-	nC
Q_{gs}	Gate-Source Charge		-	2.6	-	
Q_{gd}	Gate-Drain Charge		-	1.7	-	

■ Drain-Source Diode Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
I_S	Drain-Source Diode Forward Continuous Current	$V_{GS} = 0V$	-	-	8	A
I_{SM}	Maximum Pulsed Current	$V_{GS} = 0V$	-	-	24	
V_{SD}	Drain-Source Diode Forward Voltage	$V_{GS} = 0V, I_F = 1A$	-	0.76	-	V
T_{rr}	Body Diode Reverse Recovery Time	$V_R = 400V, I_F = 3A,$ $di_F/dt = 100A/\mu s$	-	174	-	ns
Q_{rr}	Body Diode Reverse Recovery Charge	$V_R = 400V, I_F = 3A,$ $di_F/dt = 100A/\mu s$	-	1.2	-	μC

Notes:

- $T_J = +25^\circ C$ to $+150^\circ C$
- Repetitive rating; pulse width limited by maximum junction temperature.
- Pulse width $\leq 300\mu s$; duty cycle $\leq 2\%$
- $L = 10mH, V_{DD} = 50V, I_{AS} = 9A, R_G = 25\Omega$ Starting $T_J = 25^\circ C$.

■ Characteristic Curve

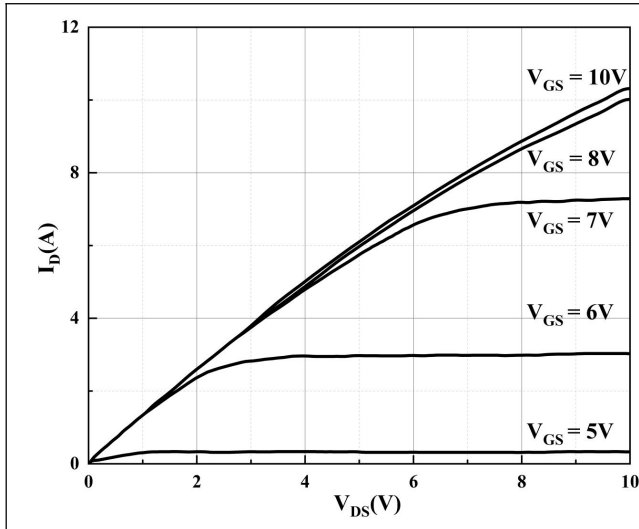


Figure 1. Typical Output Characteristics

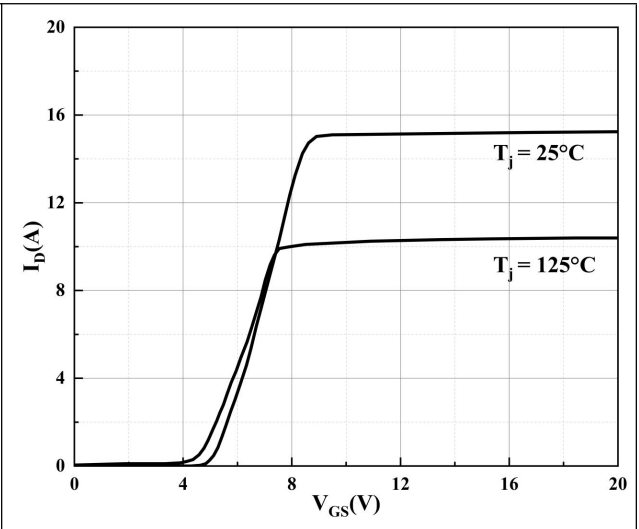


Figure 2. Typical Transfer Characteristics

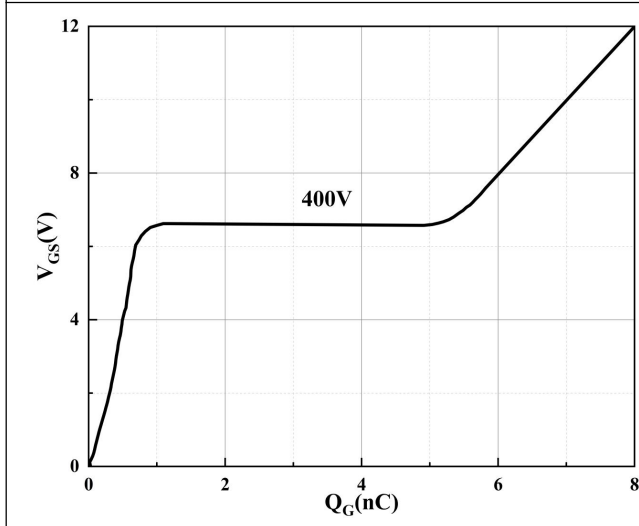


Figure 3. Typical Gate Charge

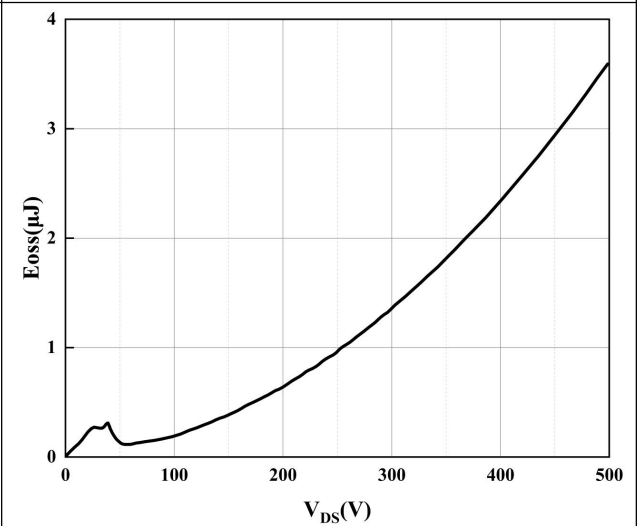


Figure 4. Typical C_{oss} Stored Energy

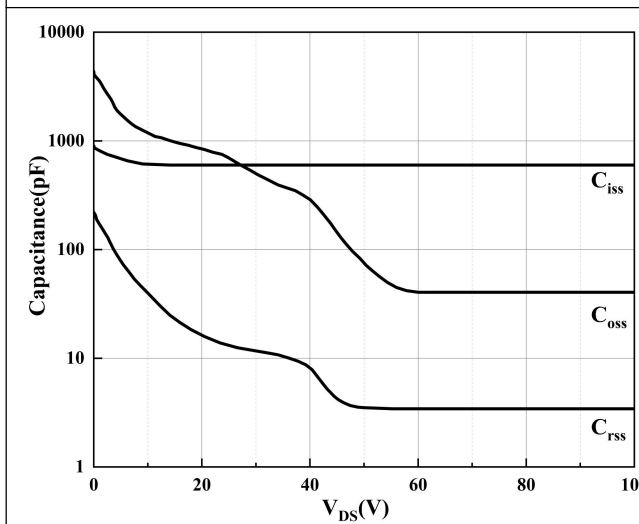


Figure 5. Typical Capacitance

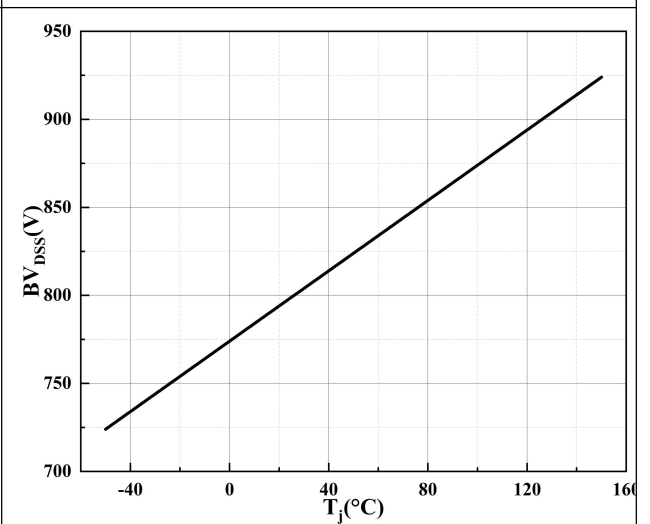


Figure 6. Drain-source Breakdown Voltage



Technical drawing of a mechanical part showing three views: a top view, a front view, and a side view. The top view shows a rectangular plate with a central circular hole of diameter 3.18 mm and four corner holes of diameter 1.5 mm. The front view shows the plate's thickness and the central hole. The side view shows the plate's profile with a central slot and a bottom flange. Dimensions are given in millimeters with tolerances.

Top View Dimensions:

- Overall width: 10.16 ± 0.2
- Overall height: 15.87 ± 0.2
- Central hole diameter: $\phi 3.18$
- Corner hole diameter: $\phi 1.5 \times 0.1 \pm 0.05 \text{ DP}$
- Distance from center to corner hole center: 2.54

Front View Dimensions:

- Overall height: 12.93 ± 0.2
- Central hole diameter: $\phi 3.18$
- Distance from center to corner hole center: 2.54

Side View Dimensions:

- Overall width: 4.70 ± 0.05
- Distance from center to corner hole center: 2.54
- Distance from center to corner hole center: 1.20
- Distance from center to corner hole center: 1.27 ± 0.05
- Distance from center to corner hole center: 0.80
- Distance from center to corner hole center: 2.76 ± 0.03
- Distance from center to corner hole center: 0.50