

■ PRODUCT CHARACTERISTICS

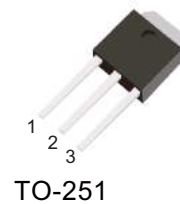
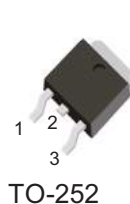
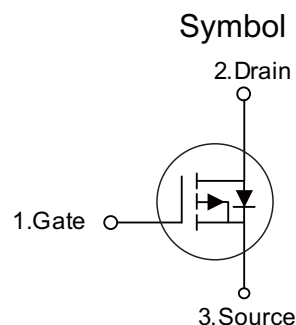
V _{DSS}	-30	V
R _{DS(ON)} -Typ (atV _{GS} =-4.5V)	6.7	mΩ
R _{DS(ON)} -Typ (atV _{GS} =-10V)	4.7	mΩ
I _D	-80	A

■ APPLICATIONS

LCD TV Appliances
LCDM Appliances
High power inerrter system

■ FEATURES

Surface-mounted package
Advanced trench cell design



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT80P03D	TO-252	2500 pieces /Reel
N/A	MOT80P03C	TO-251	70 pieces/Tube

■ ABSOLUTE MAXIMUM RATINGS (T_C =25°C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DSS}	-30	V
Gate -Source Voltage	V _{GSS}	±20	V
Continuous Drain Current	T _C =25°C	I _D	-80 A
	T _C =100°C	I _D	-52 A
Pulsed Drain Current	I _{DM}	-320	A
Single Pulsed Avalanche Energy	E _{AS}	342	mJ
Power Dissipation	P _D	80	W
Thermal Resistance, Junction to Case	R _{θJC}	2.2	°C /W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

■ ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, unless otherwise noted)

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30	-	-	V
Zero Gate Voltage Drain Voltage	I_{DSS}	$V_{DS} = -30V, V_{GS} = 0V,$	-	-	-1	μA
Gate to Body Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$	-	-	± 100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.0	-1.5	-2.5	V
Static Drain-Source on-Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -20A$	-	4.7	7	m Ω
		$V_{GS} = -4.5V, I_D = -10A$	-	6.7	8.5	m Ω
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V,$ $f = 1.0MHz$	-	8180	-	pF
Output Capacitance	C_{oss}		-	945	-	pF
Reverse Transfer Capacitance	C_{rss}		-	650	-	pF
Total Gate Charge	Q_g	$V_{DD} = -15V, I_D = -30A,$ $V_{GS} = -10V$	-	125	-	nC
Gate-Source Charge	Q_{gs}		-	26	-	nC
Gate-Drain("Miller") Charge	Q_{gd}		-	20	-	nC
Switching characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -15V, I_D = -30A,$ $V_{GS} = -10V, R_{GEN} = 2.4\Omega$	-	17	-	ns
Turn-on Rise Time	t_r		-	143	-	ns
Turn-off Delay Time	$t_{d(off)}$		-	98	-	ns
Turn-off Fall Time	t_f		-	106	-	ns
Drain-source diode characteristics						
Continuous Drain to Source	I_S		-	-	-80	A
Pulsed Drain to Source	I_{SM}		-	-	-320	A
Drain to Source Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = -30A$	-	-	-1.2	V

Notes: 1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. EAS condition: Starting $T_J = 25^\circ\text{C}$, $V_{DD} = -15V$, $V_{GS} = -10V$, $R_G = 25\Omega$, $L = 0.5mH$, $I_{AS} = -37A$

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

■ TYPICAL CHARACTERISTICS

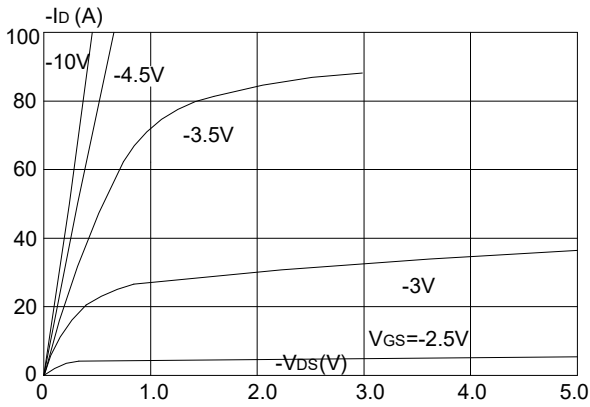


Figure 1: Output Characteristics

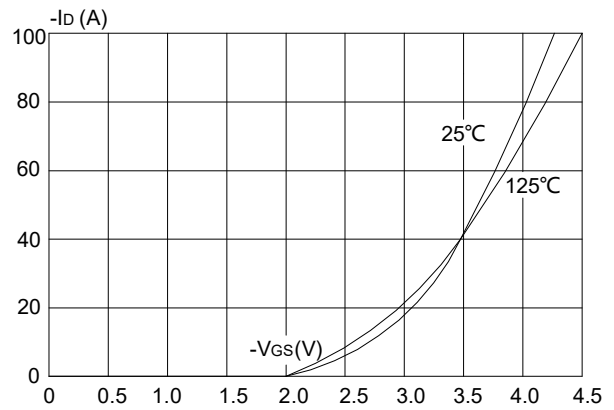


Figure 2: Typical Transfer Characteristics

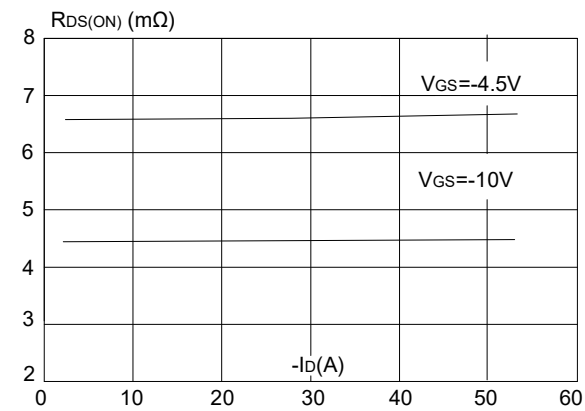


Figure 3: On-resistance vs. Drain Current

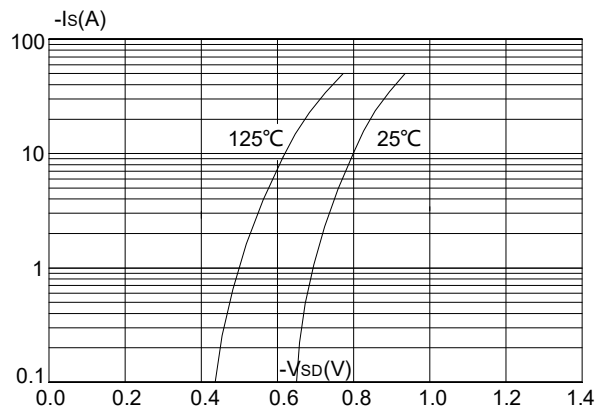


Figure 4: Body Diode Characteristics

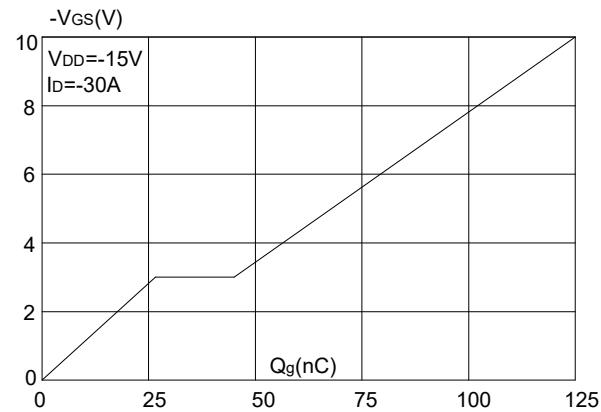


Figure 5: Gate Charge Characteristics

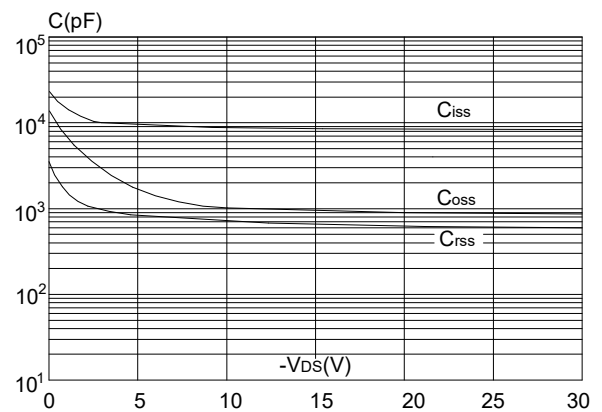


Figure 6: Capacitance Characteristics

■ TYPICAL CHARACTERISTICS(Cont.)

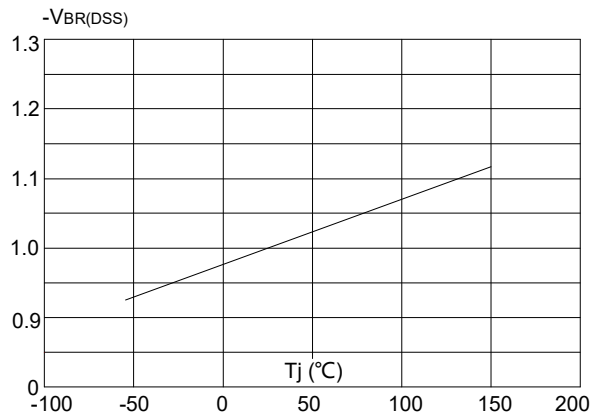


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

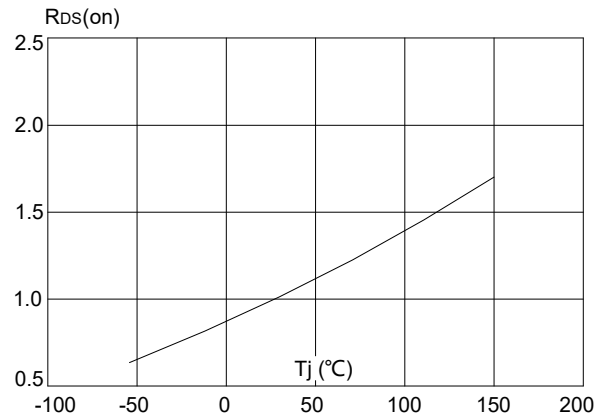


Figure 8: Normalized on Resistance vs. Junction Temperature

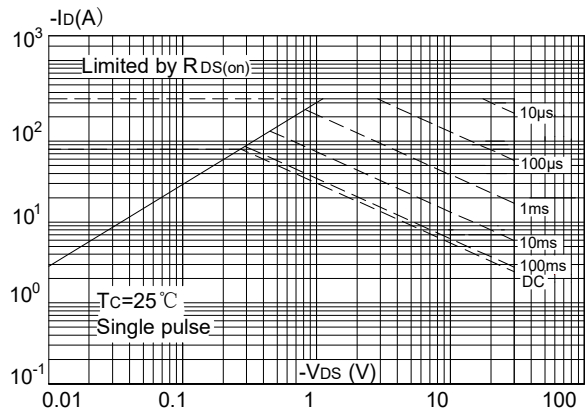


Figure 9: Maximum Safe Operating Area

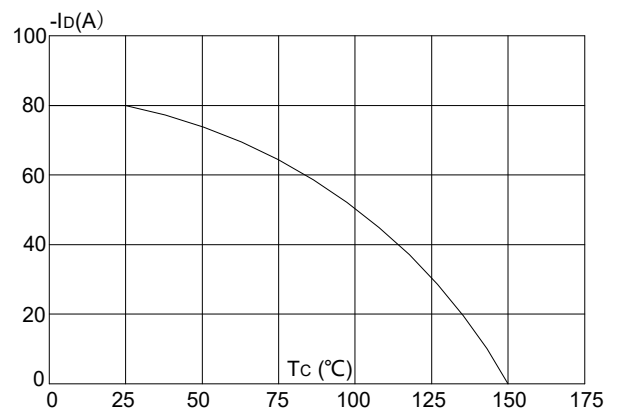


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

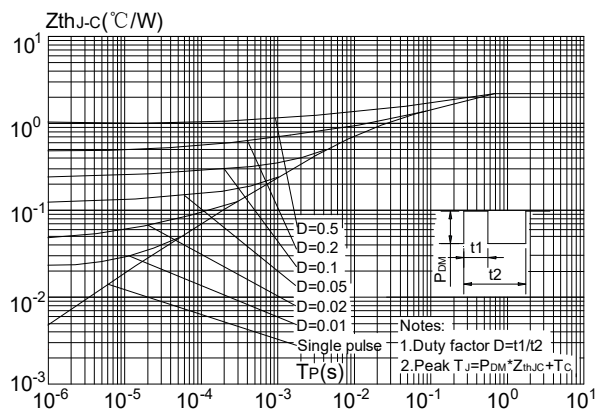
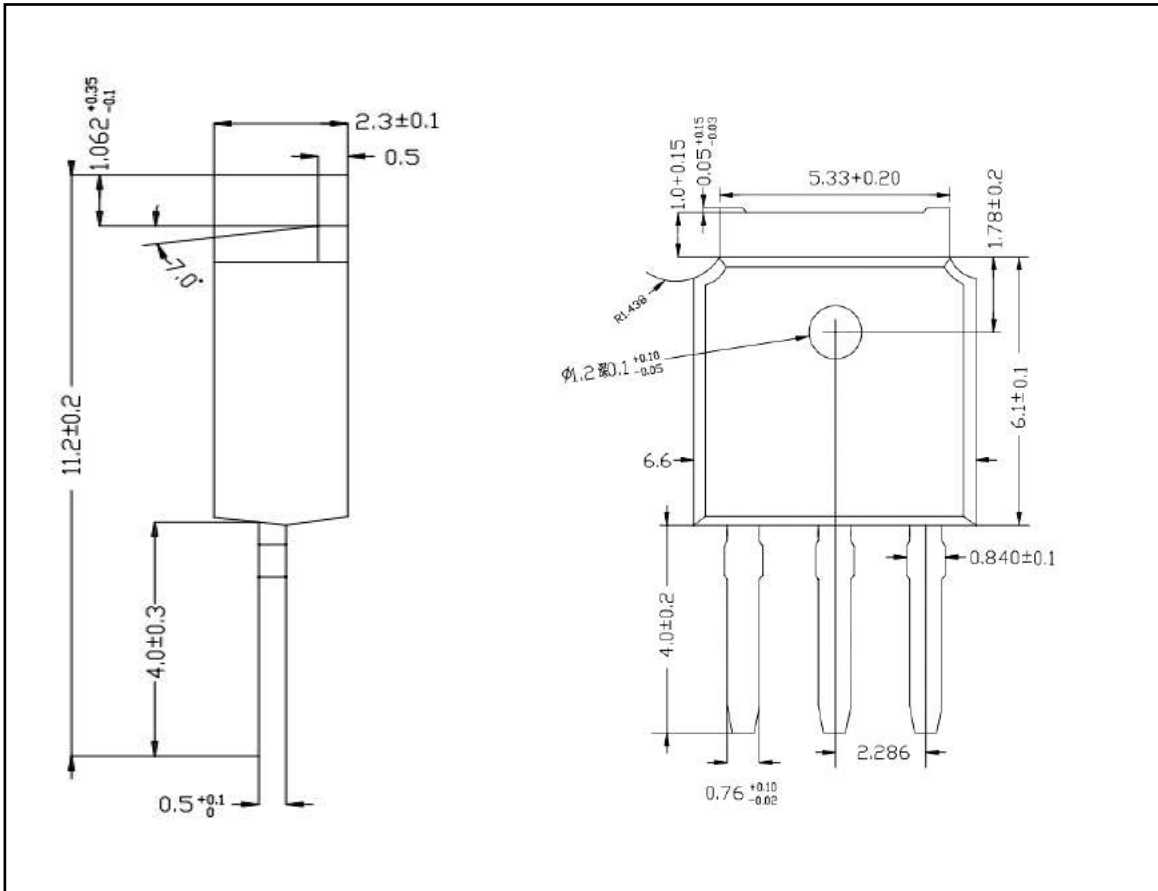


Figure 9: Maximum Effective Transient Thermal Impedance, Junction-to-Case

■ TO-252 PACKAGE OUTLINE DIMENSIONS



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