

PRODUCT CHARACTERISTICS

VDSS	-30V
$R_{DS(on)Typ}(V_{GS}=-10V)$	8.5mΩ
ID	-50A

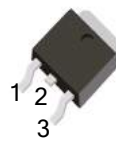
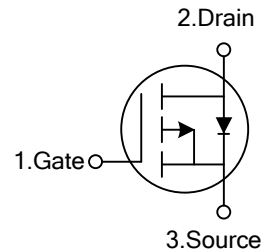
APPLICATIONS

- * Electronic Ballast
- * Electronic Transformer
- * Switch Mode Power Supply

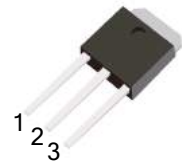
FEATURES

- * $R_{DS(ON)} \leq 8.5m\Omega @ V_{GS}=-10V$
- * High Switching Speed

Symbol



TO-252



TO-251

ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT50P03D	TO-252	2500 pieces /Reel
N/A	MOT50P03C	TO-251	70 pieces/Tube

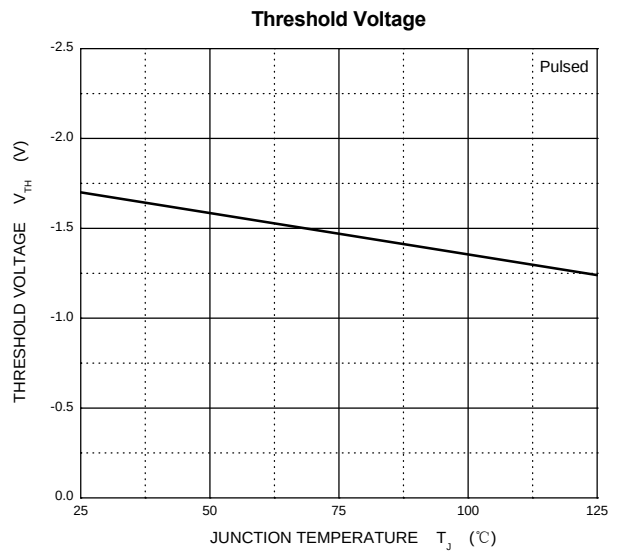
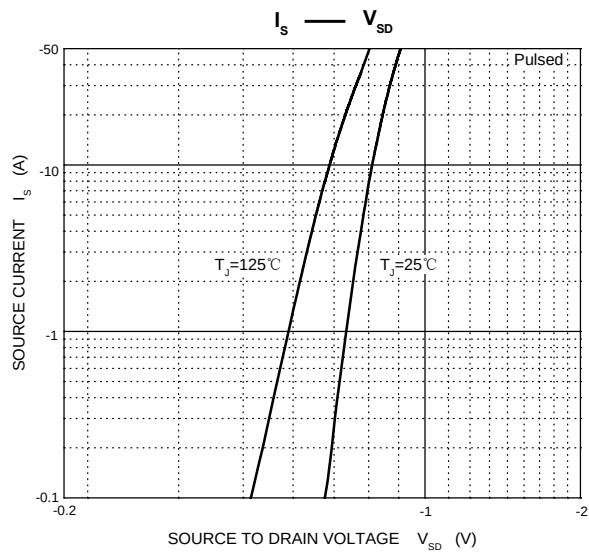
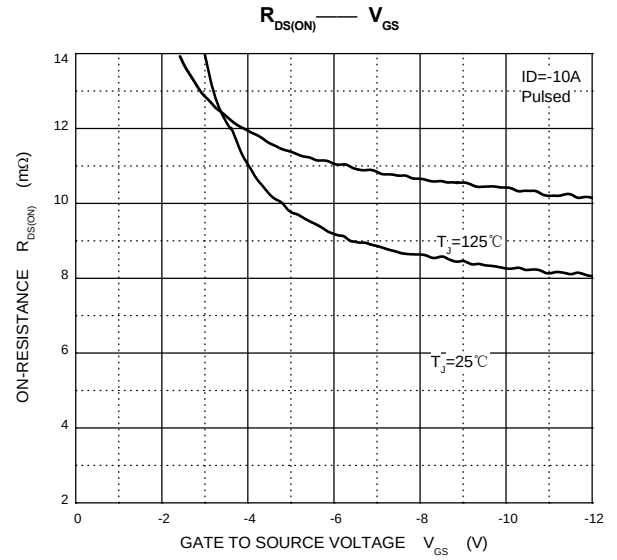
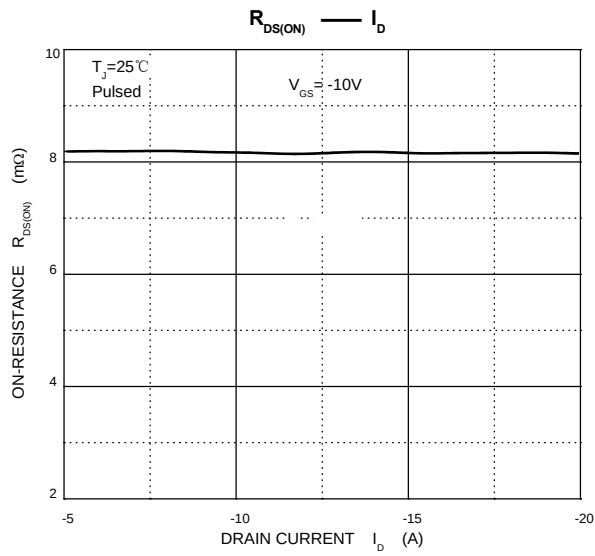
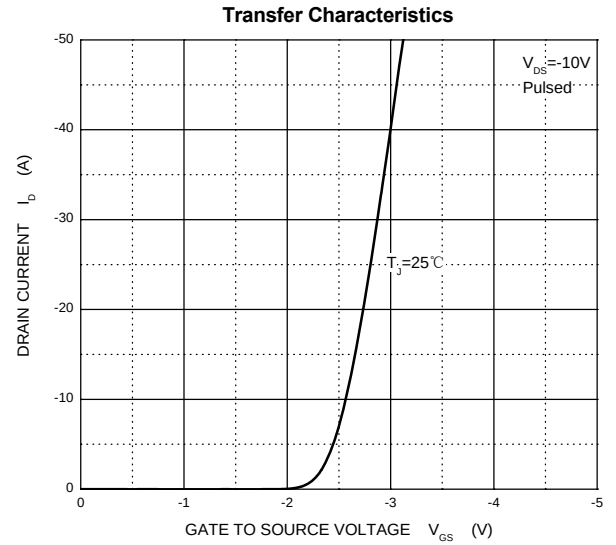
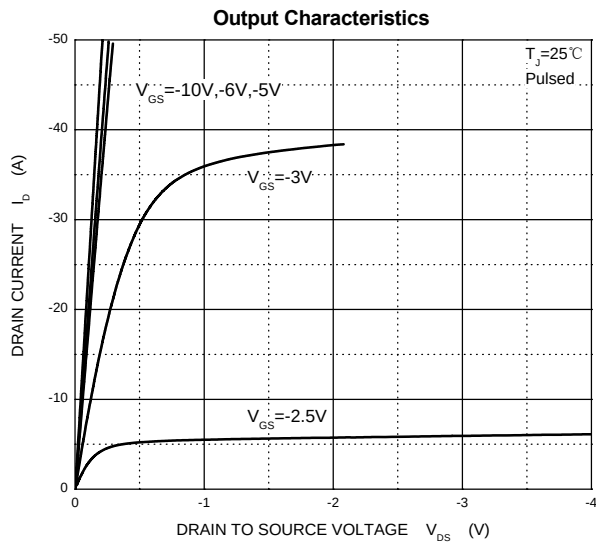
ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-50	A
Pulsed Drain Current	I_{DM}	-200	A
Single Pulsed Avalanche Energy	E_{AS}	300	mJ
Maximum Power Dissipation	P_D	65	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	1.92	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	$^\circ\text{C}$

■ ELECTRICAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$, 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 current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$	-	-	-1	μA
		$T_J = 125^{\circ}C$	-	-	-200	μA
Gate-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	-	-2.5	V
Static drain-source on-sate resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -10A$	-	8.5	10	m Ω
Forward transconductance	g_{fs}	$V_{DS} = -10V, I_D = -15A$	10	-	-	S
Dynamic characteristics						
Input capacitance	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V,$ $f = 1MHz$	-	3590	-	pF
Output capacitance	C_{oss}		-	695	-	pF
Reverse transfer capacitance	C_{rss}		-	665	-	pF
Switching characteristics						
Total gate charge	Q_g	$V_{GS} = -10V,$ $V_{DS} = -15V, I_D = -10A$	-	84	-	nC
Gate-source charge	Q_{gs}		-	11.7	-	nC
Gate-drain charge	Q_{gd}		-	25	-	nC
Turn-on delay time	$t_{d(on)}$	$V_{DD} = -15V, I_D = -10A,$ $V_{GS} = -10V, R_G = 6\Omega$	-	13	-	ns
Turn-on rise time	t_r		-	12	-	ns
Turn-off delay time	$t_{d(off)}$		-	50	-	ns
Turn-off fall time	t_f		-	14	-	ns
Drain-source diode characteristics						
Drain-source diode forward voltage	V_{SD}	$V_{GS} = 0V, I_S = -10A$	-	-	-1.2	V
Drain-source diode forward current	I_S		-	-	-50	A
Pulsed drain-source diode forward current	I_{SM}		-	-	-200	A

■ TEST CIRCUITS AND WAVEFORMS



Technical drawing of a mechanical part, showing front and top views with dimensions.

Front View (Left):

- Overall height: 11.2 ± 0.2
- Top flange thickness: $1.062^{+0.35}_{-0.1}$
- Top flange width: 2.3 ± 0.1
- Top flange hole diameter: 0.5
- Top flange chamfer: 7.0°
- Bottom flange thickness: 4.0 ± 0.3
- Bottom flange width: $0.5^{+0.1}_0$

Top View (Right):

- Overall width: 5.33 ± 0.20
- Overall depth: 6.1 ± 0.1
- Top flange thickness: 1.0 ± 0.15
- Top flange hole diameter: $0.05^{+0.15}_{-0.03}$
- Top flange chamfer: $R1.438$
- Top flange hole diameter: $\phi 1.2^{+0.10}_{-0.05}$
- Top flange hole diameter: 6.6
- Top flange hole diameter: 4.0 ± 0.2
- Top flange hole diameter: 0.840 ± 0.1
- Top flange hole diameter: 2.286
- Top flange hole diameter: $0.76^{+0.10}_{-0.02}$

■ TO-252-2L PACKAGE OUTLINE DIMENSIONS

