

■ PRODUCT CHARACTERISTICS

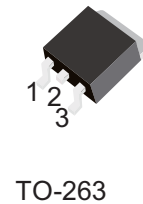
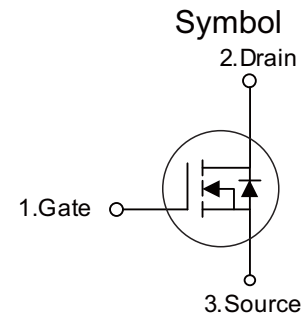
VDSS	60V
$R_{DS(on)Typ}(V_{GS}=10V)$	7mΩ
ID	80A

■ FEATURES

- * Extremely low on-resistance $R_{DS(ON)}$
- * Excellent $Q_g \times R_{DS(ON)}$ product

■ APPLICATIONS

- * Motor control and drive
- * Battery management
- * ups



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT80N06A	TO-220	50 pieces/Tube
N/A	MOT80N06E	TO-263	800 pieces /Reel

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	80	A
Drain Current-Continuous($T_C=100^\circ\text{C}$)	$I_D(100^\circ\text{C})$	56.5	A
Pulsed Drain Current	I_{DM}	320	A
Maximum Power Dissipation	P_D	110	W
Single pulse avalanche energy	E_{AS}	390	mJ
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 175	$^\circ\text{C}$

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	60	65	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2	2.9	4	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=20A$	-	7	9	m Ω
Forward Transconductance	g_{FS}	$V_{DS}=5V, I_D=20A$	20	-	-	S
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $F=1.0MHz$	-	4000	-	PF
Output Capacitance	C_{oss}		-	290	-	PF
Reverse Transfer Capacitance	C_{rss}		-	210	-	PF
Switching characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=30V, R_L=1\Omega$ $V_{GS}=10V, R_G=3\Omega$	-	8.5	-	nS
Turn-on Rise Time	t_r		-	7	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	40	-	nS
Turn-Off Fall Time	t_f		-	15	-	nS
Total Gate Charge	Q_g	$V_{DS}=30V, I_D=20A,$ $V_{GS}=10V$	-	90.3	-	nC
Gate-Source Charge	Q_{gs}		-	10.9	-	nC
Gate-Drain Charge	Q_{gd}		-	20.6	-	nC
Drain-source diode characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=20A$	-	-	1.2	V
Diode Forward Current	I_S		-	-	80	A
Reverse Recovery Time	t_{rr}	$T_J = 25^{\circ}C, I_F = 20A$ $di/dt = 100A/\mu s$	-	32	-	nS
Reverse Recovery Charge	Q_{rr}		-	45	-	nC

■ TYPICAL CHARACTERISTICS

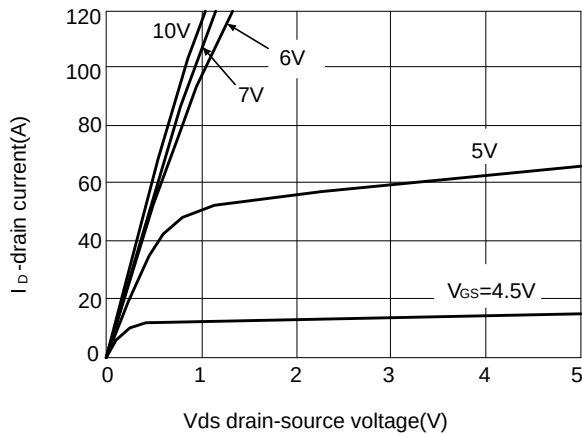


Figure 1: Output characteristics

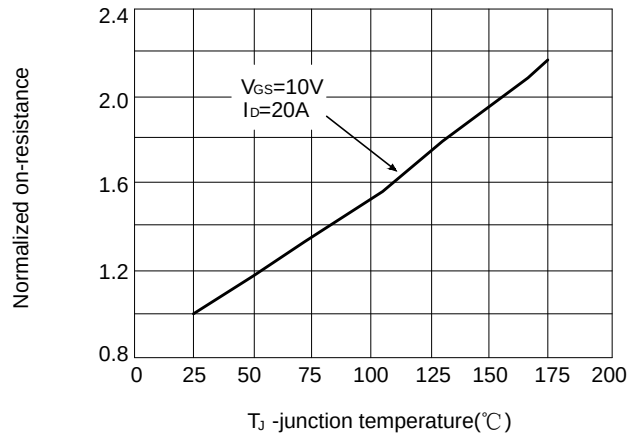


Figure 2: Rdson-junction temperature

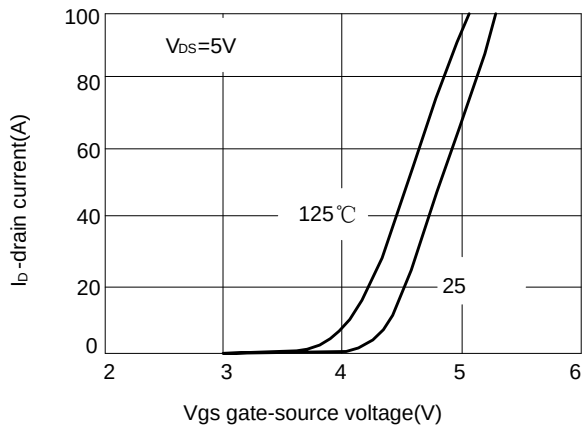


Figure 3: Transfert characteristics

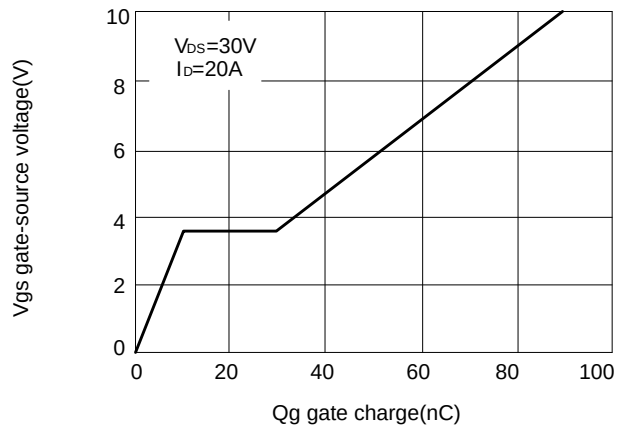


Figure 4: Gate charge

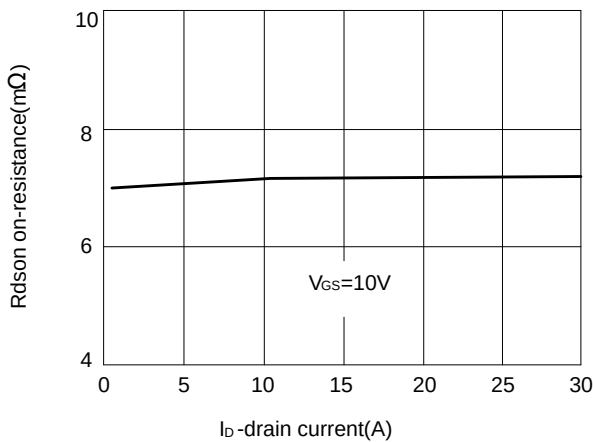


Figure 5: Rdson-drain current

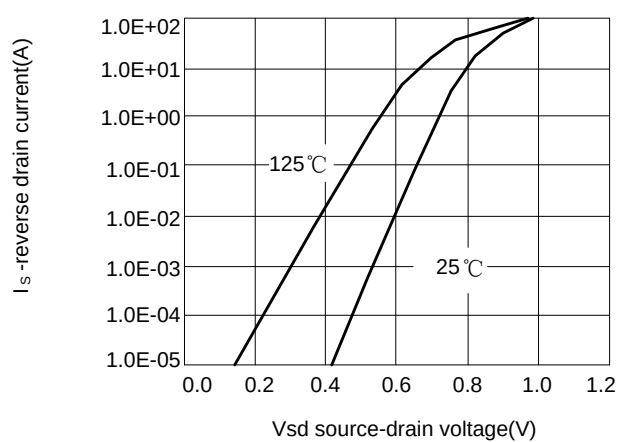


Figure 6: Source-drain diode forward

■ TYPICAL CHARACTERISTICS(Cont.)

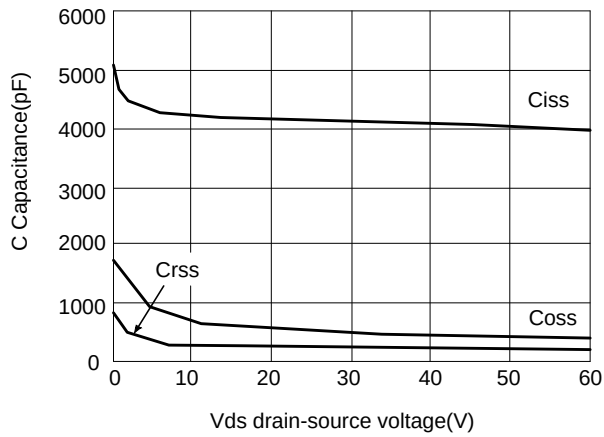


Figure 7: Capacitance vs vds

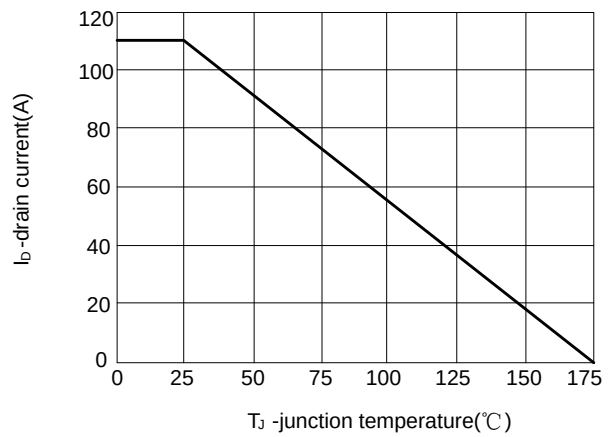


Figure 8: Power de-rating

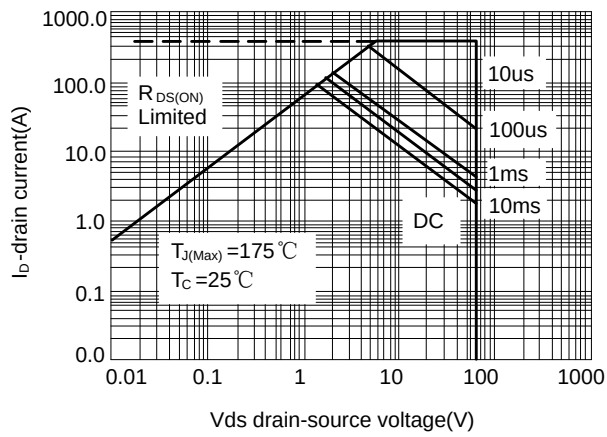


Figure 9: Safe operation area

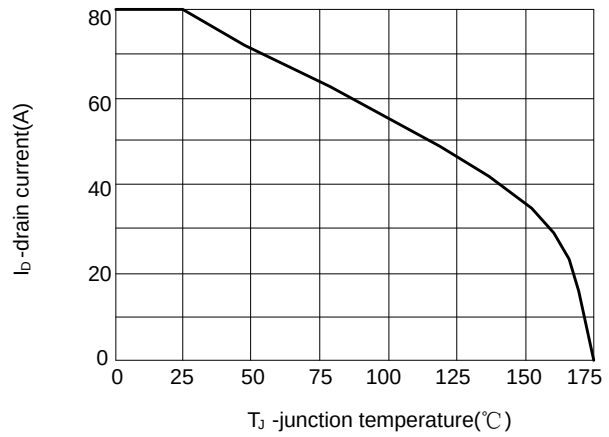
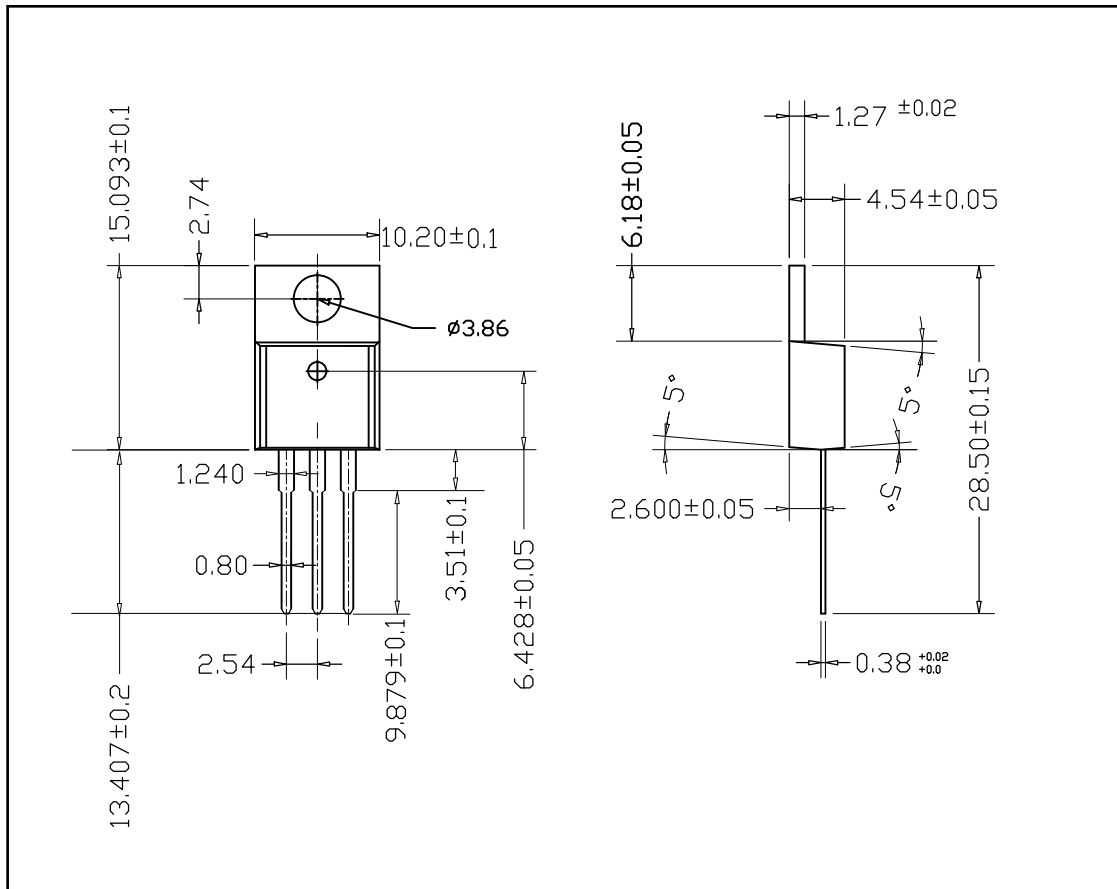


Figure 10: ID current-junction temperature

■ TO-220 PACKAGE OUTLINE DIMENSIONS



■ TO-263 PACKAGE OUTLINE DIMENSIONS

