

Description

This 30V 80A N-Channel MOSFET in a TO-252 Plastic Package.

Applications

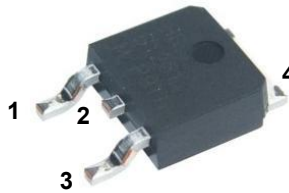
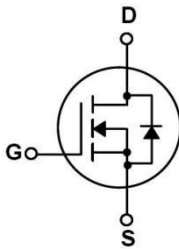
These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

Features

- Super high dense cell design for low $R_{DS(on)}$, Rugged and reliable,
- Surface mount package.
- Halogen-free Product

V_{DSS}	$R_{DS(on)}$ Typ	I_D
30V	4.8m Ω	80A

Equivalent Circuit & Pinning



PIN1: Gate

PIN 2: Drain

PIN 3: Source

PIN 4: Drain

Absolute Maximum Ratings(Ta=25°C)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	30	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	80	A
Drain Current - Pulsed		I_{DM}	300	A
Gate-Source Voltage		V_{GSS}	± 20	V
Single Pulsed Avalanche Energy		E_{AS}	211	mJ
Avalanche Current		I_{AS}	23	A
Power Dissipation		$P_D(T_c=25^\circ\text{C})$	90	W
Operating and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Junction-to-Ambient	$t \leq 10$	$R_{\theta JA}$	18	°C/W
Junction-to-Ambient	Steady-State		45	
Junction-to-Case	Steady-State	$R_{\theta JC}$	1.38	

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$ $V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.7	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=70A$		4.8	6.5	m Ω
		$V_{GS}=4.5V$ $I_D=35A$		7.0	9	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=10A$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		209 0		pF
Output Capacitance	C_{oss}			790		
Reverse Transfer Capacitance	C_{rss}			634		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		1.9		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $V_{DS}=15V$ $I_D=20A$		30	42	nC
Total Gate Charge	$Q_{g(4.5V)}$			14	20	
Gate Source Charge	Q_{gs}			5.1		
Gate Drain Charge	Q_{gd}			6.3		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=10V$ $V_{DS}=15V$ $R_L=0.75\Omega$ $R_{GEN}=3\Omega$		8		ns
Turn-On Rise Time	t_r			4		
Turn-Off Delay Time	$t_{d(off)}$			29		
Turn-Off Fall Time	t_f			5.5		
Body Diode Reverse Recovery Time	t_{rr}	$I_F=20A, di/dt=500A/us$		16.5		ns
Body Diode Reverse Recovery Charge	Q_{rr}	$I_F=20A, di/dt=500A/us$		34.2		nC

Electrical Characteristic Curve

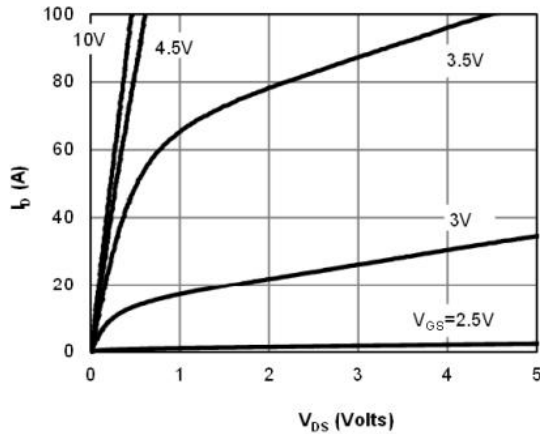


Figure 1: On-Region Characteristics

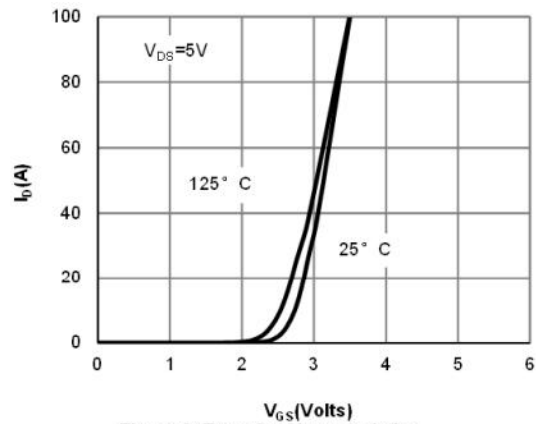


Figure 2: Transfer Characteristics

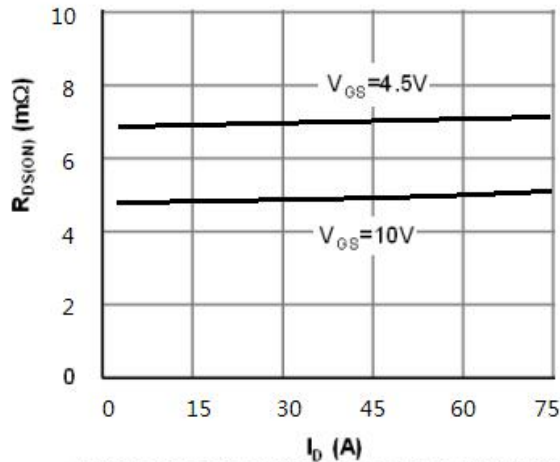


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

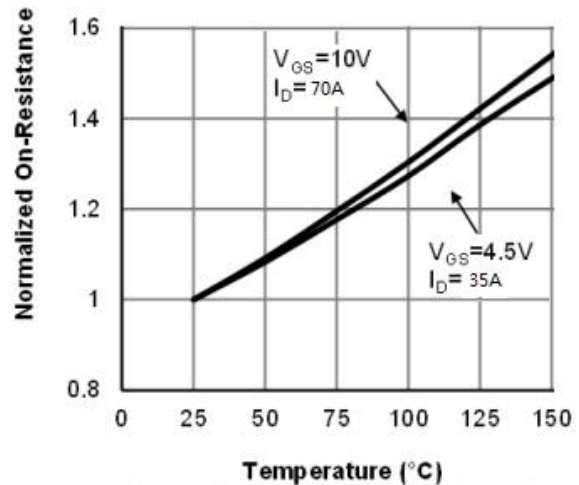


Figure 4: On-Resistance vs. Junction Temperature

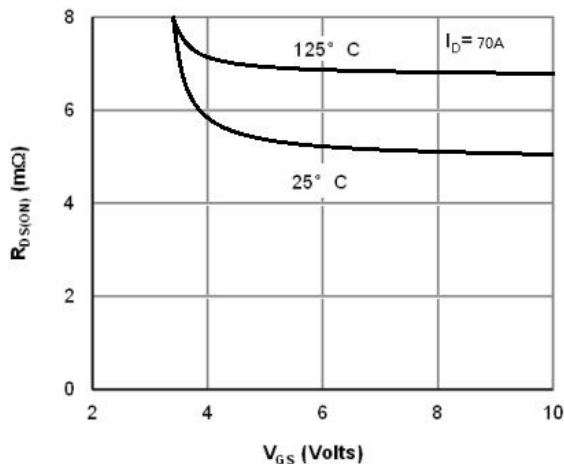


Figure 5: On-Resistance vs. Gate-Source Voltage

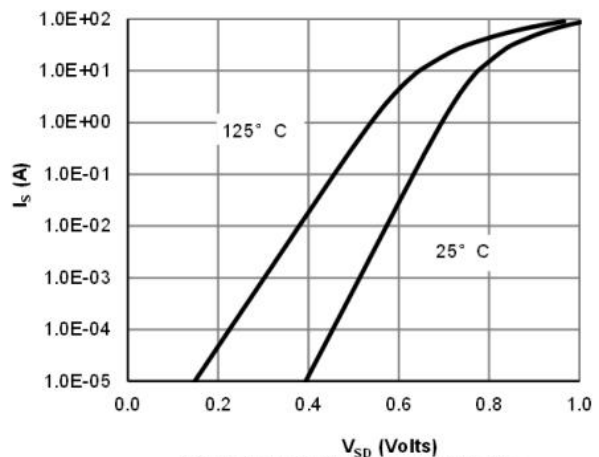
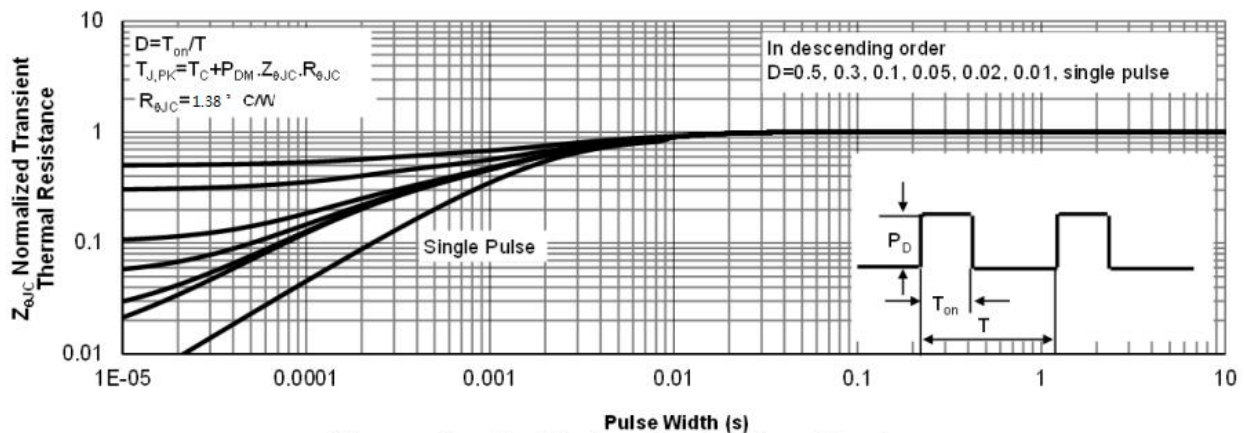
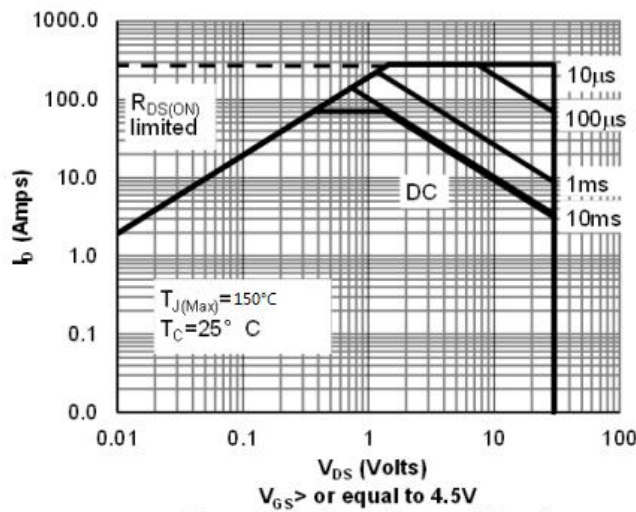
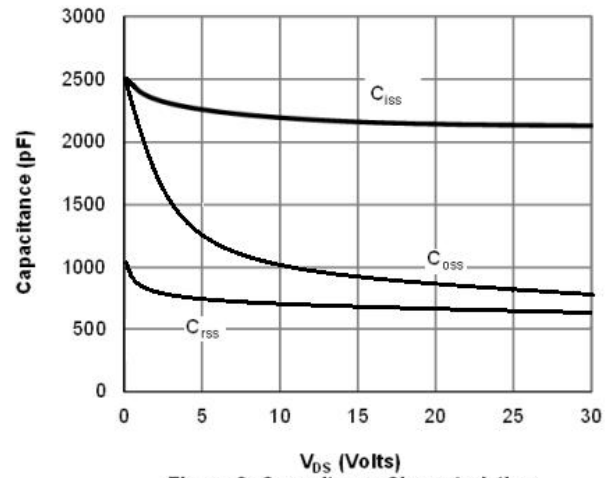
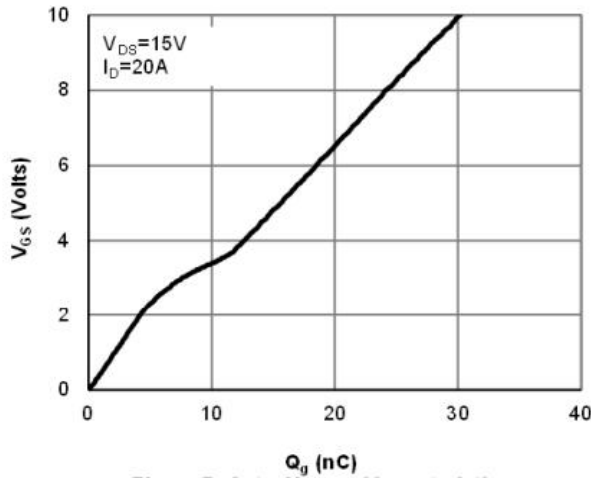
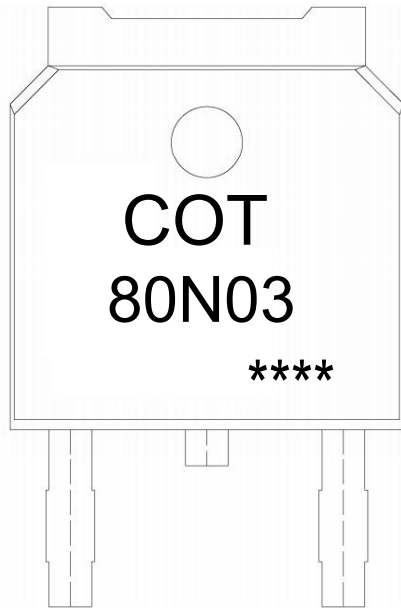


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve



Marking Instructions



Note:

COT: Company Logo.

80N03: Product Type.

****: Lot No. Code, code change with Lot No.

Packaging SPEC.

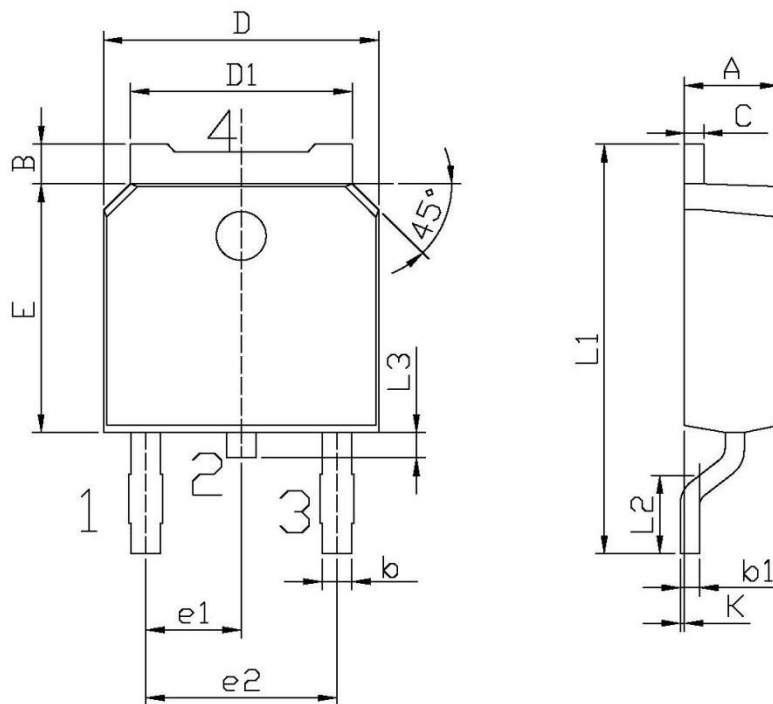
REEL

Package Type	Units					Dimension (unit: mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
TO-252	2,500	2	5,000	6	30,000	13" ×16	360×360×50	380×335×366

TUBE

Package Type	Units					Dimension (unit: mm ³)		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

Package Outline Dimensions



单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	2.20	2.40	E	5.95	6.25
B	0.95	1.25	e1	2.24	2.34
b	0.70	0.90	e2	4.43	4.73
b1	0.45	0.55	L1	9.85	10.35
C	0.45	0.55	L2	1.70	2.00
D	6.45	6.75	L3	0.60	0.90
D1	5.10	5.50	K	0.00	0.10

This package conforms to JEDEC, TO-252, issue C, variation AA

TO-252