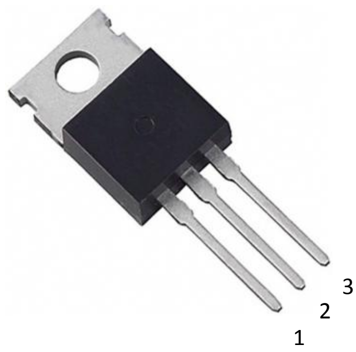
65V / 80A
N-Channel Enhancement Mode MOSFET

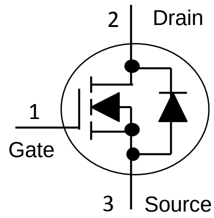
65V, $R_{DS(ON)}$=7.2mΩ@V_{GS}=10V, I_D=30A

Features

- Low On-State Resistance
- Excellent Gate Charge x $R_{DS(ON)}$ Product (FOM)
- Fully Characterized Avalanche Voltage and Current
- Specially Desigened for DC-DC Converter, Off-line UPS, Automotive System, Solenoid and Motor Control
- In compliance with EU RoHs 2002/95/EC Directives

TO-220AB





Mechanical Information

- Case: TO-220AB Molded Plastic
- Terminals : Solderable per MIL-STD-750,Method 2026

Marking & Ordering Information

TYPE	MARKING	PACKAGE	PACKING
HY80N07T	80N07T	TO-220AB	50PCS/TUBE

Absolute Maximum Ratings (T_C=25°C unless otherwise specified)

Parameter		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	65	V
Gate-Source Voltage		V_{GS}	$\underline{+}$20	V
Continuous Drain Current [1)]	T_C=25℃	I_D	80	A
Pulsed Drain Current [1)]		I_{DM}	320	A
Maximum Power Dissipation Derating Factor	T_C=25℃	P_D	96.7 0.65	W
Avalanche Energy with Single Pulse, L=0.3mH		E_{AS}	200	mJ
Operating Junction and Storage Temperature Range		$T_{J,}$ T_{STG}	-55 to +175	℃

Note : 1. Maximum DC current limited by the package

Thermal Characteristics

Parameter	Symbol	Value	Units
Junction-to-Case Thermal Resistance	$R_{\theta JC}$	1.55	℃/W
Junction-to-Ambient Thermal Resistance	$R_{\theta JA}$	62.5	℃/W

Electrical Characteristics (T_C=25℃, Unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V、I_D=250uA	65	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}、I_D=250uA	2	3	4	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=10V、I_D=30A	-	5.8	7.2	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=52V、V_{GS}=0V	-	-	1	uA
Gate Body Leakage Current	I_{GSS}	V_{GS}=±20V、V_{DS}=0V	-	-	100	nA
Dynamic						
Total Gate Charge	Qg	V_{DS}=30V、I_D=30A V_{GS}=10V	-	122	-	nC
Gate-Source Charge	Qgs		-	36	-	
Gate-Drain Charge	Qgd		-	46	-	
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=30V、I_D=30A V_{GS}=10V、R_G=3.6Ω	-	28	-	ns
Turn-On Rise Time	t_r		-	22.6	-	
Turn-Off Delay Time	$t_{d(off)}$		-	95	-	
Turn-Off Fall Time	t_f		-	38	-	
Input Capacitance	C_{iss}	V_{DS}=30V、V_{GS}=0V f=1.0MH_Z	-	4850	-	pF
Output Capacitance	C_{oss}		-	660	-	
Reverse Transfer Capacitance	C_{rss}		-	320	-	
Gate Resistance	Rg		-	1.5	-	Ω
Source-Drain Diode						
Max. Diode Forwad Voltage	I_S	-	-	-	120	A
Diode Forward Voltage	V_{SD}	I_S=30A、V_{GS}=0V	-	0.84	1.4	V
Reverse Recovery Time	t_{rr}	V_{GS}=0V、I_S=30A di/dt=100A/us	-	42	-	ns
Reverse Recovery Charge	Q_{rr}		-	65	-	uC

NOTE : Pulse Test : Pulse Width ≦ 300us, duty cycle ≦ 2%

Typical Characteristics Curves (T_C=25℃, unless otherwise noted)

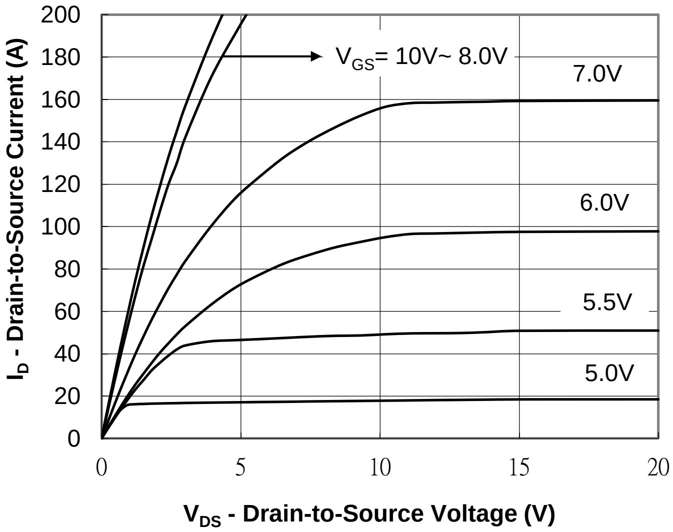


Fig.1 Output Characteristic

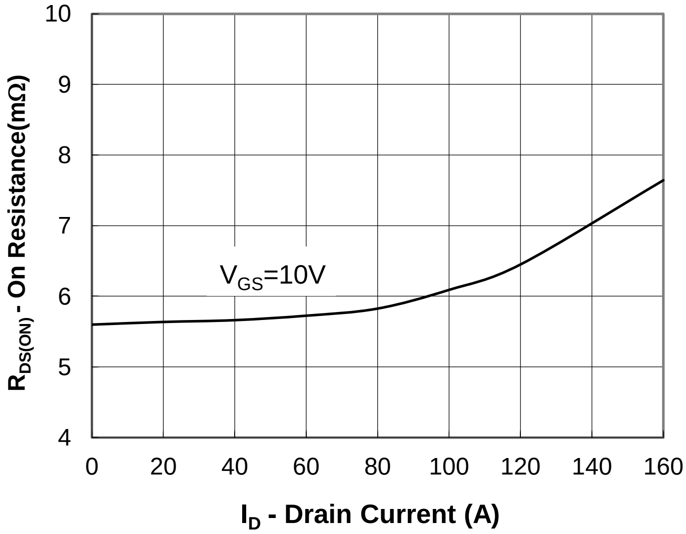


Fig.2 On-Resistance vs Drain Current

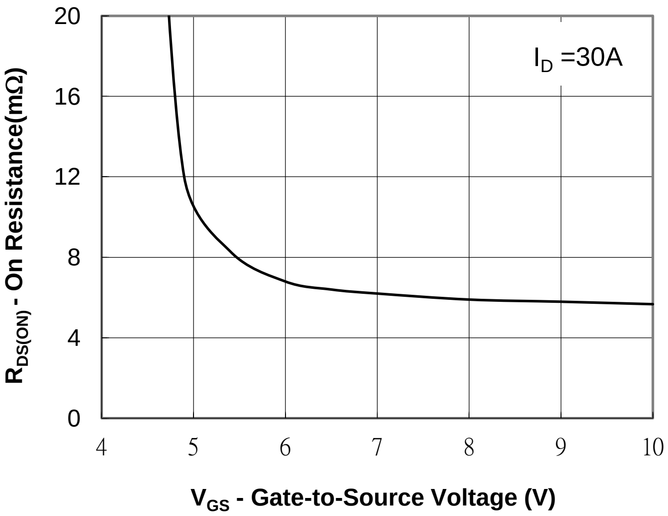


Fig.3 On-Resistance vs Gate to Source Voltage

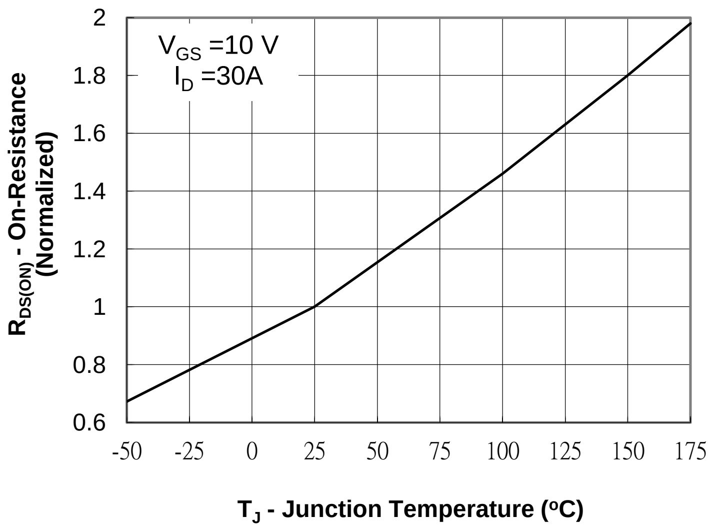


Fig.4 On-Resistance vs Junction Temperature

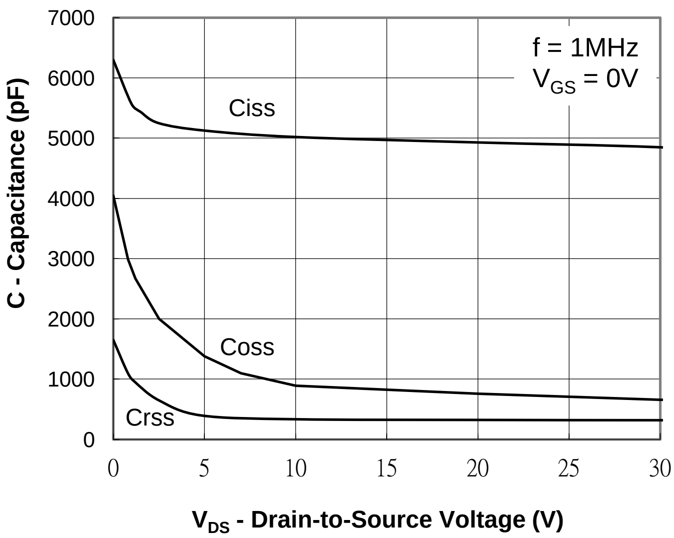


Fig.5 Capacitance Characteristic

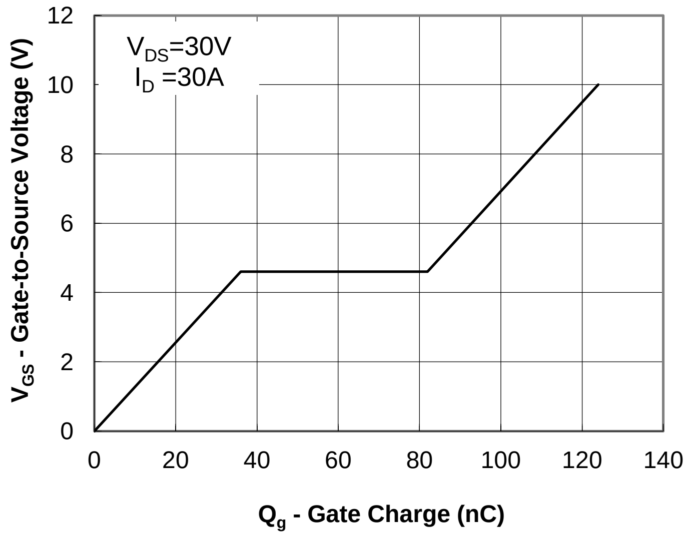


Fig.6 Gate Charge Characteristic

Typical Characteristics Curves (T_C=25℃, unless otherwise noted)

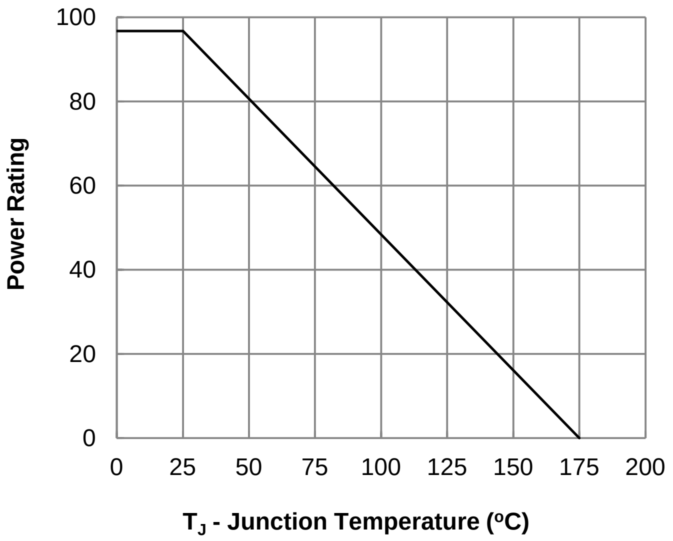


Fig.7 Power Derating Curve

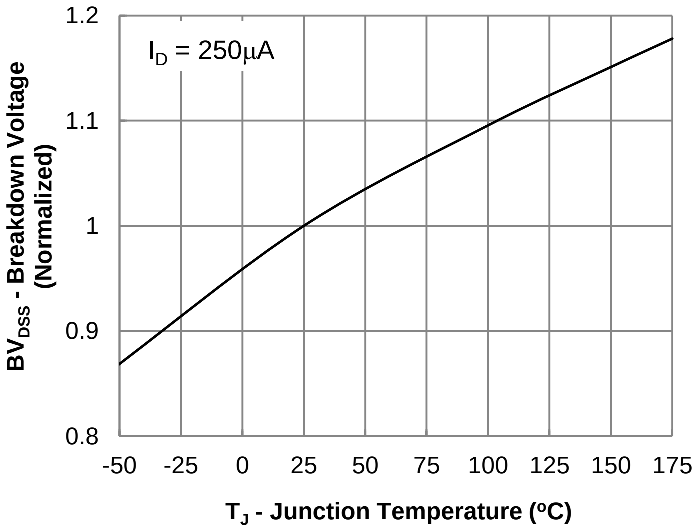


Fig.8 Breakdown Voltage vs Junction Temperature

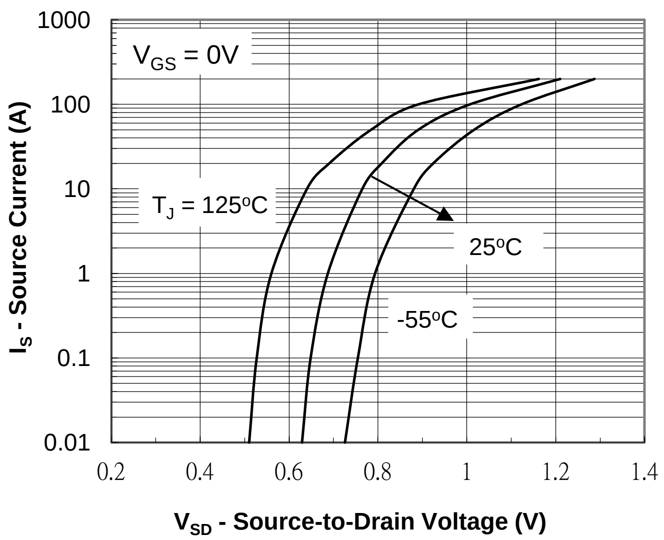


Fig.9 Body Diode Forward Voltage Characteristic