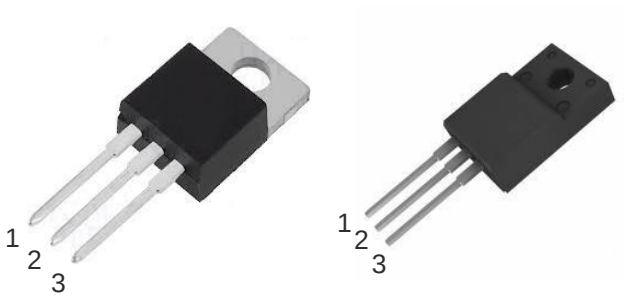
HY8N70T / HY8N70FT

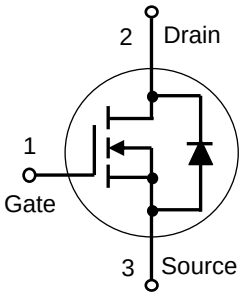
700V / 8A **N-Channel Enhancement Mode MOSFET**	700V, $R_{DS(ON)}$=1.2Ω@V_{GS}=10V, I_D=4.0A

Features

- Low On-State Resistance
- Fast Switching
- Low Gate Charge & Low C_{RSS}
- Fully Characterized Avalanche Voltage and Current
- Specially Desigened for AC Adapter, Battery Charger and SMPS
- In compliance with EU RoHs 2002/95/EC Directives

TO-220AB ITO-220AB





Mechanical Information

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

Marking & Ordering Information

TYPE	MARKING	PACKAGE	PACKING
HY8N70T	8N70T	TO-220AB	50PCS/TUBE
HY8N70FT	8N70FT	ITO-220AB	50PCS/TUBE

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

Parameter		Symbol	HY8N70T	HY8N70FT	Units
Drain-Source Voltage		V_{DS}	700		V
Gate-Source Voltage		V_{GS}	±30		V
Continuous Drain Current	T_C=25℃	I_D	8	8	A
Pulsed Drain Current [1)]		I_{DM}	32	32	A
Maximum Power Dissipation Derating Factor	T_C=25℃	P_D	156 1.25	50 0.4	W
Avalanche Energy with Single Pulse I_{AS}=7A, V_{DD}=95V, L=15.5mH		E_{AS}	500		mJ
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to +150		℃

Note : 1. Maximum DC current limited by the package

Thermal Characteristics

Parameter	Symbol	HY8N70T	HY8N70FT	Units
Junction-to-Case Thermal Resistance	$R_{\theta JC}$	0.8	2.5	℃/W
Junction-to-Case Thermal Resistance	$R_{\theta JA}$	50	110	℃/W

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

Paramter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V、I_D=250uA	700	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}、I_D=250uA	2.0	-	4.0	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=10V、I_D=4.0A	-	0.95	1.2	Ω
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=700V、V_{GS}=0V	-	-	10	uA
Gate Body Leakage Current	I_{GSS}	V_{GS}=±30V、V_{DS}=0V	-	-	±100	nA
Dynamic						
Total Gate Charge	Qg	V_{DS}=560V，I_D=8A V_{GS}=10V	-	32.6	38	nC
Gate-Source Charge	Qgs		-	6.2	-	
Gate-Drain Charge	Qgd		-	7.6	-	
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=350V，I_D=8A V_{GS}=10V，R_G=25Ω	-	28.8	34	ns
Turn-On Rise Time	t_r		-	42.6	52	
Turn-Off Delay Time	$t_{d(off)}$		-	56.2	62	
Turn-Off Fall Time	t_f		-	24.6	28	
Input Capacitance	C_{iss}	V_{DS}=25V，V_{GS}=0V f=1.0M_{HZ}	-	1250	-	pF
Output Capacitance	C_{oss}		-	210	-	
Reverse Transfer Capacitance	C_{rss}		-	3.5	-	
Source-Drain Diode						
Max. Diode Forwad Voltage	I_S	-	-	-	8.0	A
Max. Pulsed Source Current	I_{SM}	-	-	-	32	A
Diode Forward Voltage	V_{SD}	I_S=5A、V_{GS}=0V	-	-	1.4	V
Reverse Recovery Time	t_{rr}	V_{GS}=0V、I_S=8A di/dt=100A/us	-	355	-	ns
Reverse Recovery Charge	Q_{rr}		-	3.6	-	uC

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

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

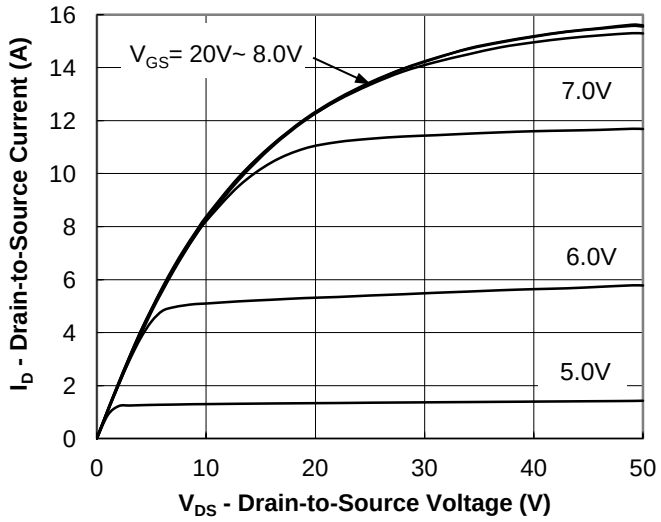


Fig.1 Output Characteristic

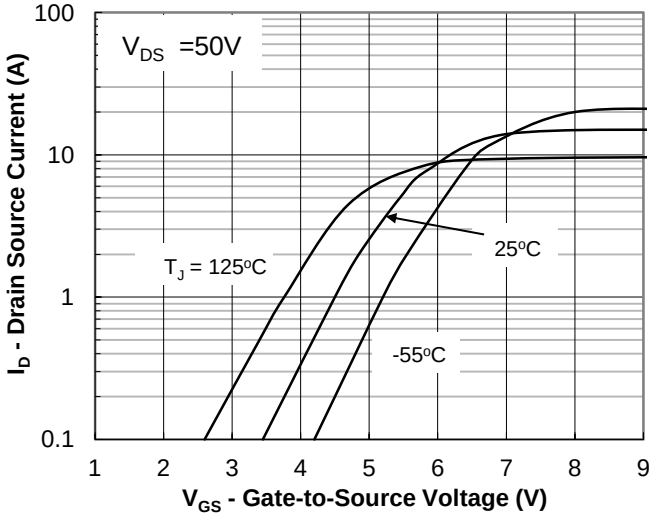


Fig.2 Transfer Characteristic

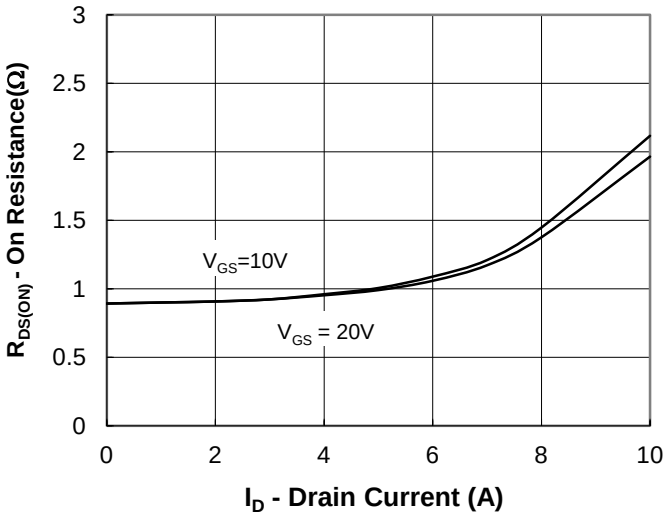


Fig.3 On-Resistance vs Drain Current

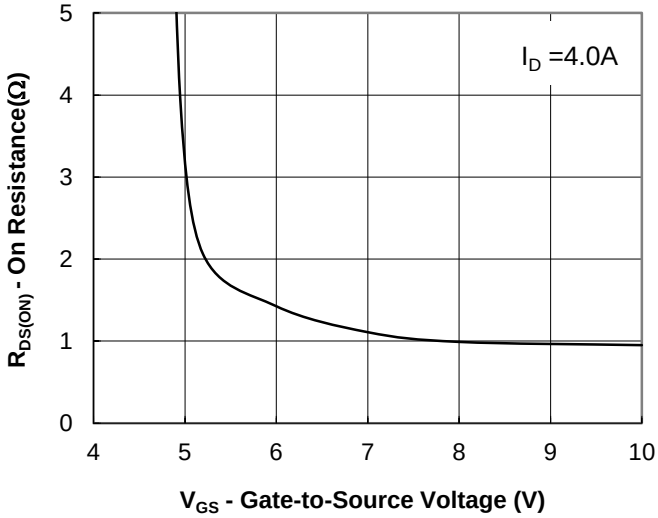


Fig.4 On-Resistance vs Gate to Source Voltage

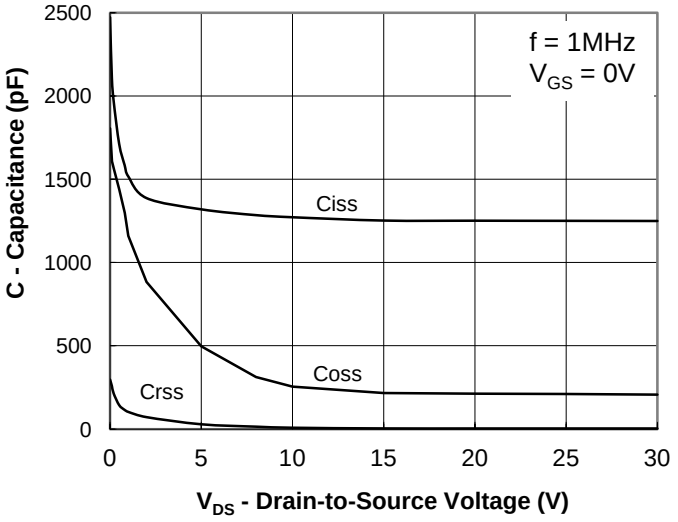


Fig.5 Capacitance Characteristic

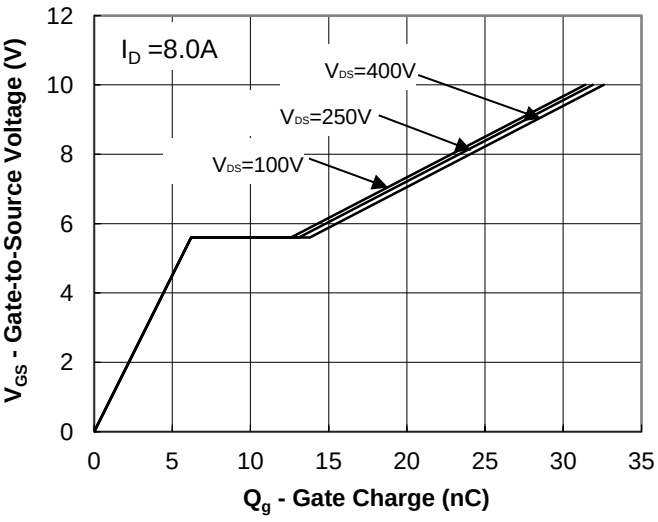


Fig.6 Gate Charge Characteristic

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

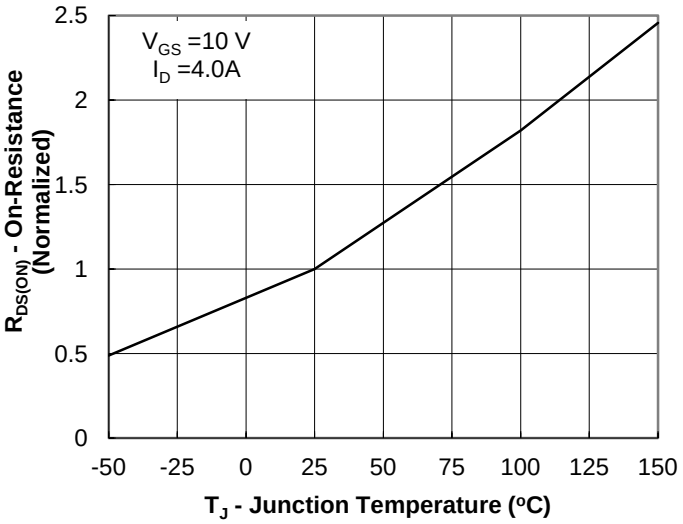


Fig.7 On-Resistance vs Junction Temperature

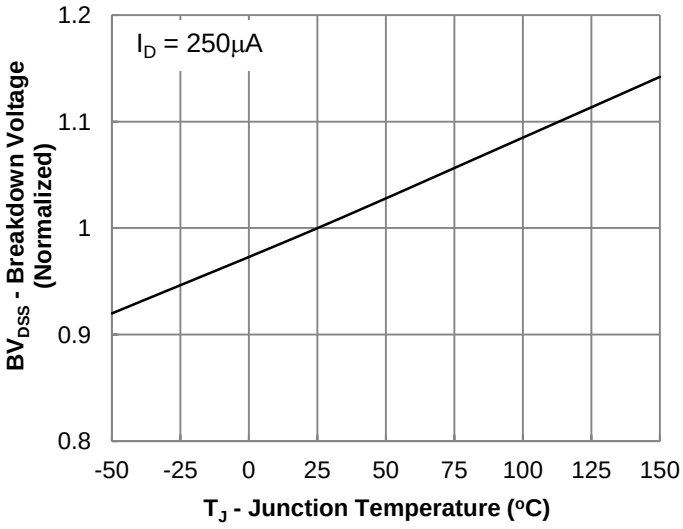


Fig.8 Breakdown Voltage vs Junction Temperature

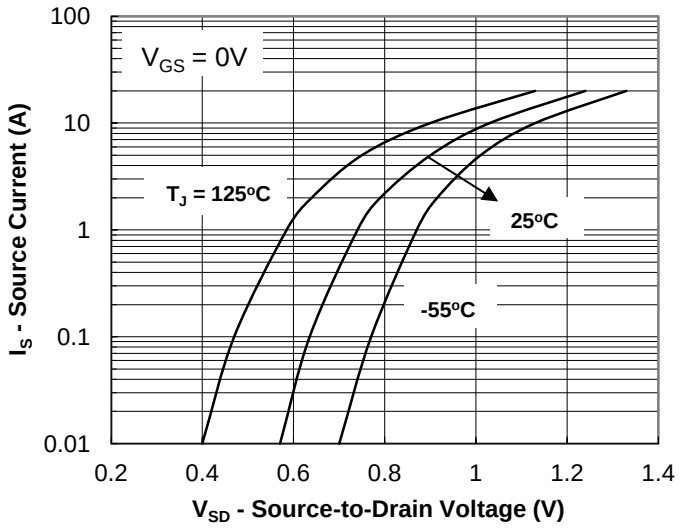


Fig.9 Body Diode Forward Voltage Characteristic