

N-CHANNEL SILICON POWER MOS-FET

F-I SERIES

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

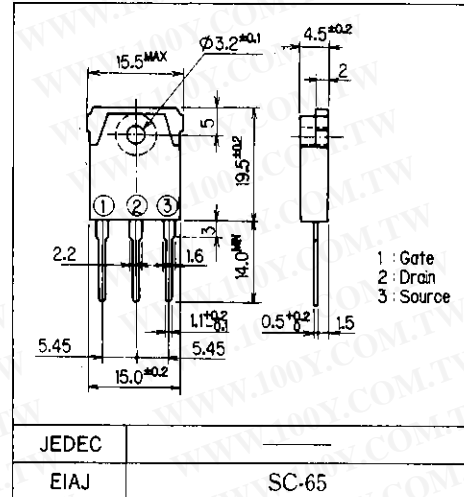
Features

- High speed switching
- Low on-resistance
- No secondary breakdown
- Low driving power
- High voltage

Applications

- Switching regulators
- UPS
- DC-DC converters
- General purpose power amplifier

Outline Drawings

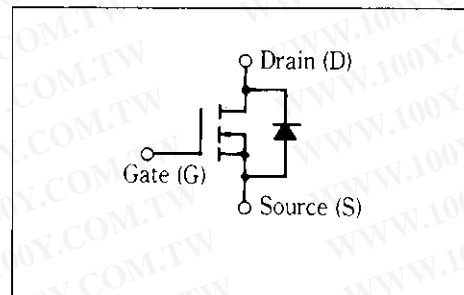


Max. Ratings and Characteristics

Absolute Maximum Ratings(Tc=25°C)

Items	Symbols	Ratings	Units
Drain-source voltage	V_{DS}	500	V
Continuous drain current	I_D	18	A
Pulsed drain current	$I_{D(puls)}$	72	A
Continuous reverse drain current	I_{DR}	18	A
Gate-source peak voltage	V_{GSS}	±20	V
Max. power dissipation	P_D	125	W
Operating and storage temperature range	T_{ch}	150	°C
	T_{stg}	-55 ~ +150	°C

Equivalent Circuit Schematic



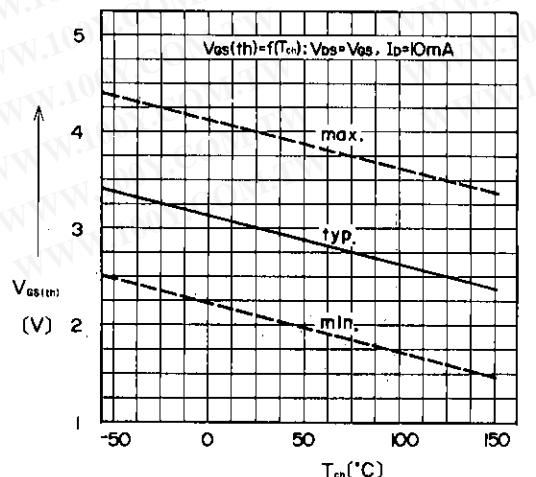
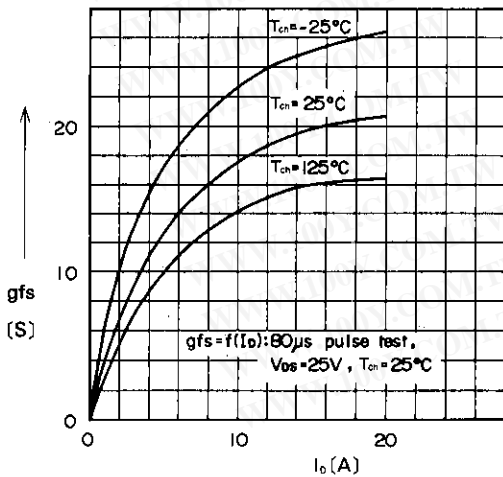
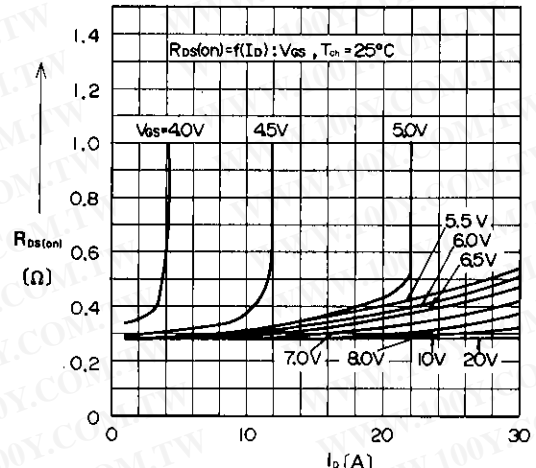
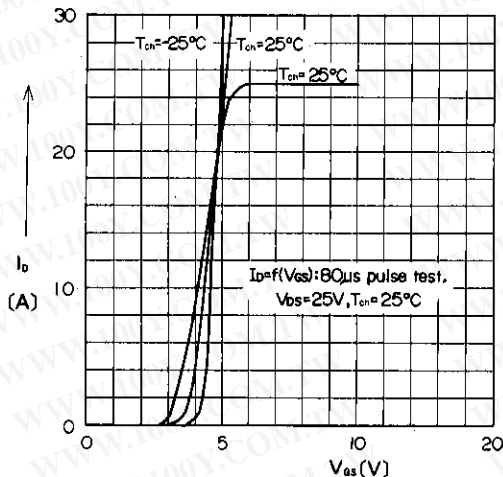
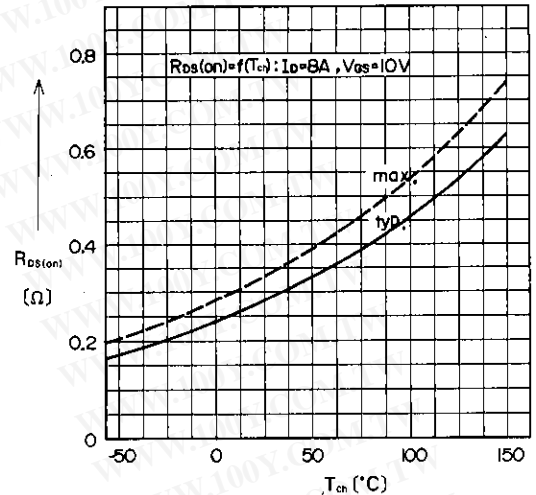
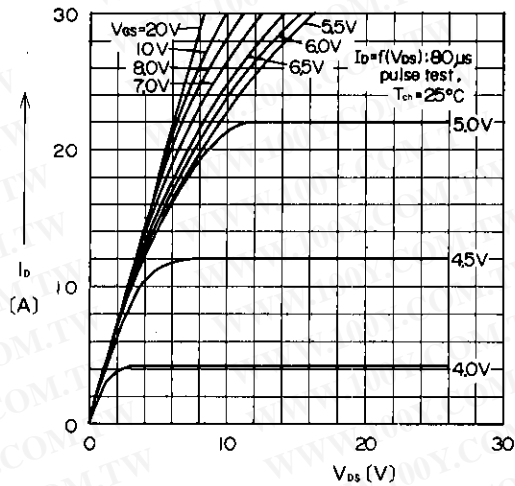
Electrical Characteristics(Tc=25°C)

Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D = 1mA, V_{GS} = 0V$	500			V
Gate threshold voltage	$V_{GS(th)}$	$I_D = 10mA, V_{DS} = V_{GS}$	2.1	3.0	4.0	V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 500V, V_{GS} = 0V, T_{ch} = 25°C$		10	500	μA
Gate-source leakage current	I_{GSS}	$V_{GS} = ±20V, V_{DS} = 0V$		10	100	nA
Drain-source on-state resistance	$R_{DS(on)}$	$I_D = 8A, V_{GS} = 10V$		0.28	0.33	Ω
Forward transconductance	g_{fs}	$I_D = 8A, V_{DS} = 25V$	8.0	16.0		S
Input capacitance	C_{iss}	$V_{DS} = 25V$		2600	4000	pF
Output capacitance	C_{oss}	$V_{GS} = 0V$		330	500	
Reverse transfer capacitance	C_{rss}	$f = 1MHz$		130	200	
Switching time ($t_{ott} = t_{a(off)} + t_r$)	t_{on}	$V_{CC} = 30V, R_G = 50Ω$		130	195	ns
	$t_{d(off)}$	$I_D = 2.8A$		330	430	
	t_f	$V_{GS} = 10V$		110	140	
Diode forward on-voltage	V_{SD}	$I_F = 2 × I_{DR}, V_{GS} = 0V, T_{ch} = 25°C$		1.0	1.7	V
Reverse recovery time	t_{rr}	$I_F = I_{DR}, di/dt = 100A/μs, T_{ch} = 25°C$		600		ns

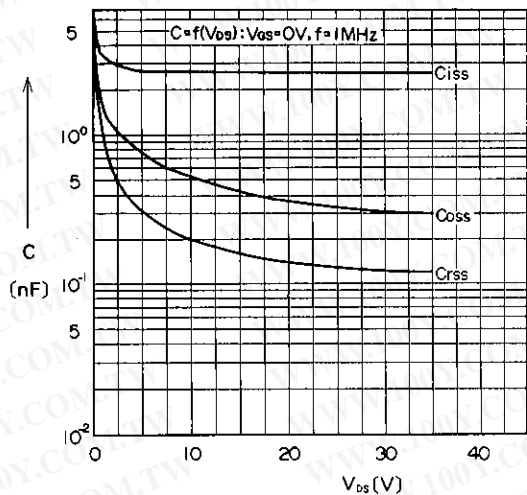
Thermal Characteristics

Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance	$R_{th(ch-a)}$	channel to air			35	°C/W
	$R_{th(ch-c)}$	channel to case			1.0	°C/W

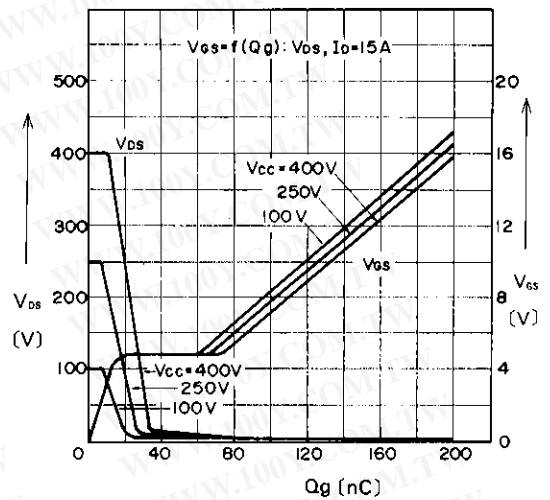
■ Characteristics



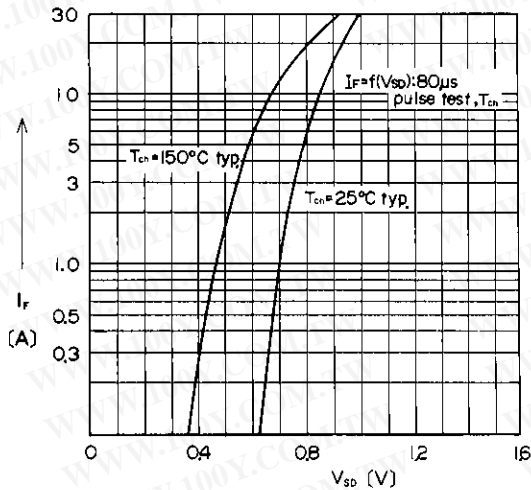
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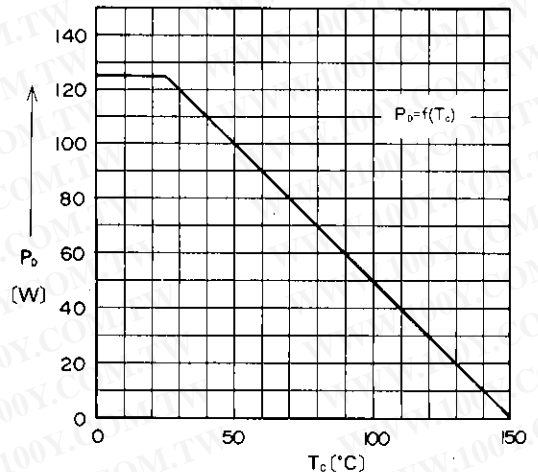
Typical Capacitance vs. V_{ds}



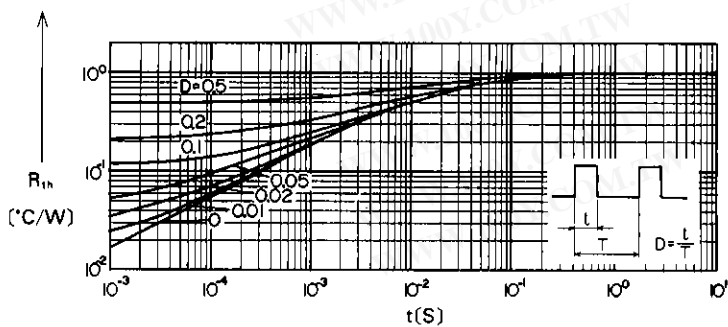
Typical Input Charge



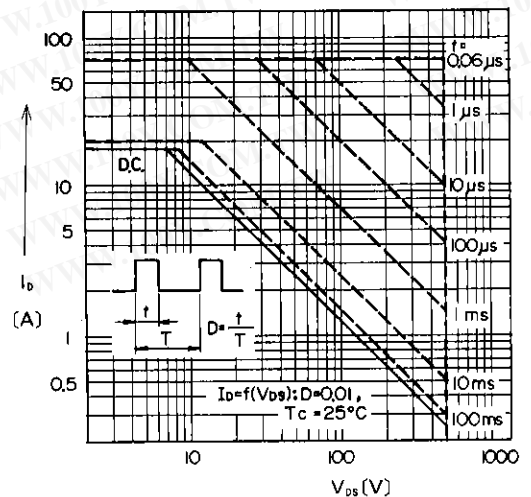
Forward Characteristics of Reverse Diode



Allowable Power Dissipation vs. T_c



Transient Thermal Impedance



Safe Operating Area