SLA5075

N-channel

3-phase DC motor 200V AC direct drive **External dimensions Ⓐ ··· SLA (15-pin)**

Absolute maximum ratings (Ta=25°C)

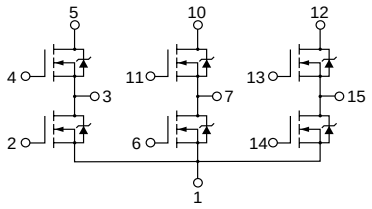
Symbol	Ratings	Unit
V_{DSS}	500	V
V_{GSS}	±30	V
I_D	±5	A
$I_{D(pulse)}$	±10 (PW≤1ms, Du≤1%)	A
E_{AS}*	45	mJ
P_T	5 (Ta=25°C, with all circuits operating, without heatsink)	W
	60 (Tc=25°C, with all circuits operating, with infinite heatsink)	
θj-a	25 (Junction-Air, Ta=25°C, with all circuits operating)	°C/W
θj-c	2.08 (Junction-Case, Tc=25°C, with all circuits operating)	°C/W
Tch	150	°C
Tstg	–40 to +150	°C

* : V_{DD}=30V, L=3.4mH, I_D=5A, unclamped, R_G=50Ω, see Fig. E on page 15.

Electrical characteristics (Ta=25°C)

Symbol	Specification min	typ	max	Unit	Conditions
$V_{(BR)DSS}$	500			V	I_D=100μA, V_{GS}=0V
I_{GSS}			±100	nA	V_{GS}=±30V
I_{DSS}			100	μA	V_{DS}=500V, V_{GS}=0V
V_{TH}	2.0		4.0	V	V_{DS}=10V, I_D=1mA
$Re_{(yfs)}$	2.4	4.0		S	V_{DS}=10V, I_D=2.5A
$R_{DS(ON)}$		1.05	1.4	Ω	V_{GS}=10V, I_D=2.5A
Ciss		770		pF	V_{DS}=10V, f=1.0MHz,
Coss		290		pF	V_{GS}=0V
td(on)		20		ns	I_D=2.5A,
tr		25		ns	V_{DD}≒200V,
td(off)		70		ns	R_L=80Ω, V_{GS}=10V,
tf		65		ns	see Fig. 3 on page 16.
V_{SD}		1.1	1.5	V	I_{SD}=5A, V_{GS}=0V
trr		75		ns	I_{SD}=2.5A, di/dt=100A/μs

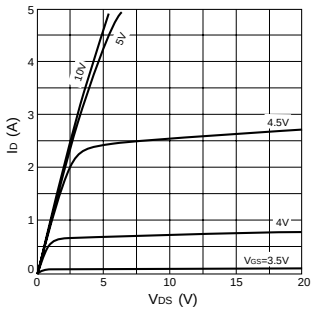
■Equivalent circuit diagram



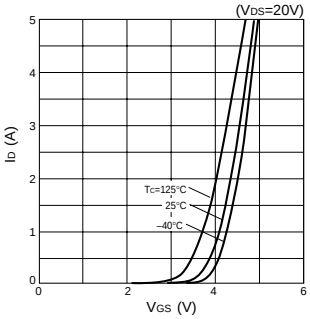
Pins 8, 9 : NC

Characteristic curves

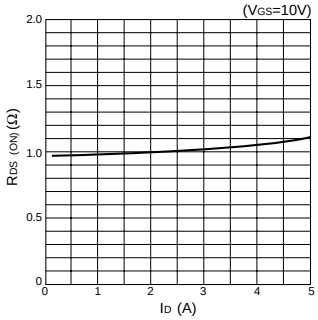
I_D-V_{DS} Characteristics (Typical)



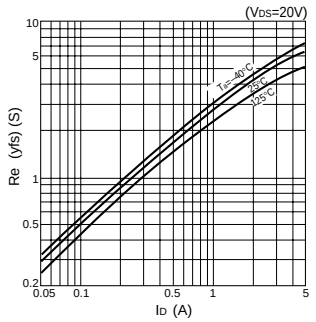
I_D-V_{GS} Characteristics (Typical)



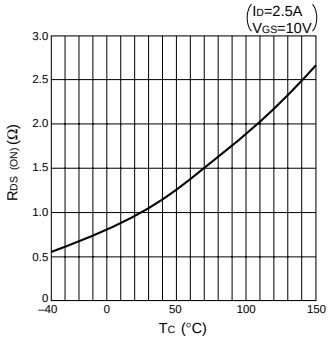
$R_{DS(ON)}$-I_D Characteristics (Typical)



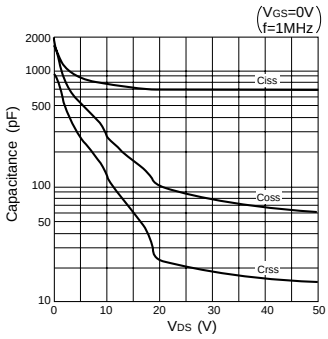
$Re_{(yfs)}$-I_D Characteristics (Typical)



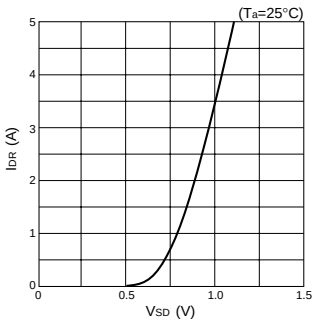
$R_{DS(ON)}$-T_C Characteristics (Typical)



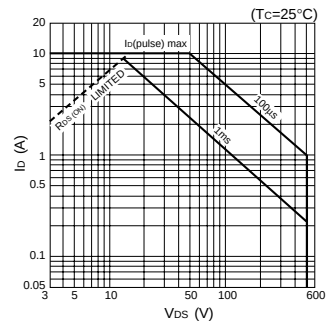
Capacitance-V_{DS} Characteristics (Typical)



I_{DR}-V_{SD} Characteristics (Typical)



Safe Operating Area (SOA)



P_T-T_a Characteristics