SLA5041

N-channel
General purpose

External dimensions Ⓐ ··· SLA

Absolute maximum ratings

(Ta=25°C)

Symbol	Ratings	Unit
V_{DSS}	200	V
V_{GSS}	±20	V
I_D	±10	A
$I_{D(pulse)}$	±40 (PW≤1ms, Du≤1%)	A
E_{AS}*	120	mJ
P_T	5 (Ta=25°C, with all circuits operating, without heatsink)	W
	40 (Tc=25°C, with all circuits operating, with infinite heatsink)	W
θj-a	25 (Junction-Air, Ta=25°C, with all circuits operating)	°C/W
θj-c	3.13 (Junction-Case, Tc=25°C, with all circuits operating)	°C/W
V_{ISO}	1000 (Between fin and lead pin, AC)	Vrms
Tch	150	°C
Tstg	–40 to +150	°C

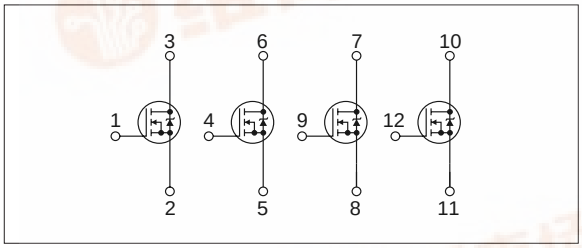
* : V_{DD}=25V, L=2.1mH, I_D=10A, unclamped, R_G=50Ω, see Fig. E on page 15.

Electrical characteristics

(Ta=25°C)

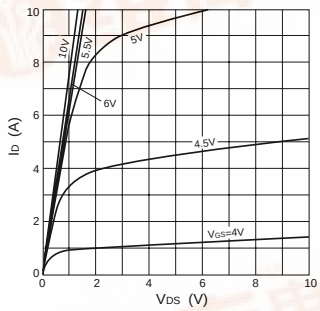
Symbol	Specification min	typ	max	Unit	Conditions
$V_{(BR)DSS}$	200			V	I_D=100μA, V_{GS}=0V
I_{GSS}			±100	nA	V_{GS}=±20V
I_{DSS}			100	μA	V_{DS}=200V, V_{GS}=0V
V_{TH}	2.0		4.0	V	V_{DS}=10V, I_D=1mA
Re(yfs)	5.0	8.5		S	V_{DS}=10V, I_D=5A
$R_{DS(ON)}$		130	175	mΩ	V_{GS}=10V, I_D=5A
Ciss		850		pF	V_{DS}=10V, f=1.0MHz,
Coss		550		pF	V_{GS}=0V
td(on)		20		ns	I_D=5A,
tr		25		ns	V_{DD}≒100V,
td(off)		70		ns	R_L=20Ω, V_{GS}=10V,
tf		70		ns	see Fig. 3 on page 16.
V_{SD}		1.0	1.5	V	I_{SD}=10A, V_{GS}=0V
trr		500		ns	I_{SD}=±100mA

■Equivalent circuit diagram

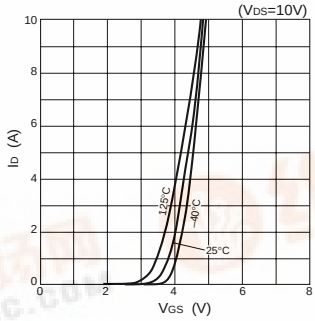


Characteristic curves

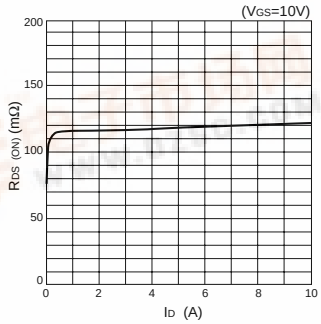
I_D-V_{DS} Characteristics (Typical)



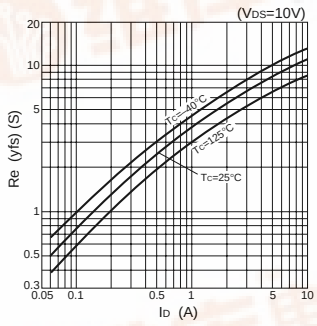
I_D-V_{GS} Characteristics (Typical)



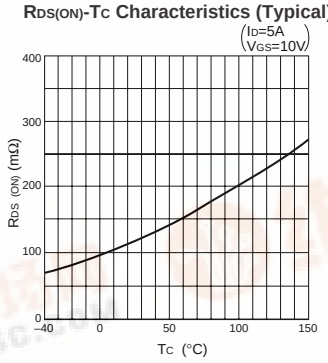
$R_{DS(ON)}$-I_D Characteristics (Typical)



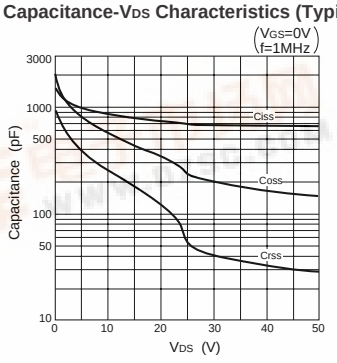
Re(yfs)-I_D Characteristics (Typical)



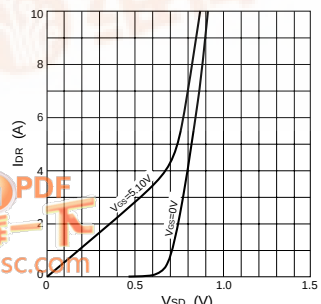
$R_{DS(ON)}$-T_C Characteristics (Typical)



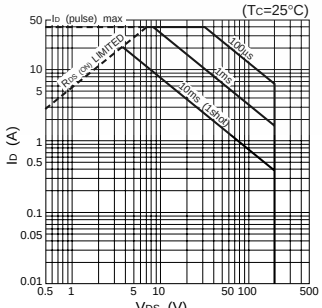
Capacitance-V_{DS} Characteristics (Typical)



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



Safe Operating Area (SOA)



P_T-T_a Characteristics