

### Absolute maximum ratings

( $T_a=25^\circ\text{C}$ )

Symbol	Ratings	Unit
$V_{DSS}$	100	V
$V_{GSS}$	$\pm 20$	V
$I_D$	$\pm 5$	A
$I_D(\text{pulse})$	$\pm 10(PW \leq 1\text{ms})$	A
$E_{AS}^*$	30	mJ
$P_T$	5 ( $T_a=25^\circ\text{C}$ , with all circuits operating, without heatsink)	W
	35 ( $T_c=25^\circ\text{C}$ , with all circuits operating, with infinite heatsink)	W
$\theta_{j-a}$	25 (Junction-Air, $T_a=25^\circ\text{C}$ , with all circuits operating)	$^\circ\text{C/W}$
$\theta_{j-c}$	3.57 (Junction-Case, $T_c=25^\circ\text{C}$ , with all circuits operating)	$^\circ\text{C/W}$
$V_{ISO}$	1000 (Between fin and lead pin, AC)	Vrms
$T_{ch}$	150	$^\circ\text{C}$
$T_{stg}$	-40 to +150	$^\circ\text{C}$

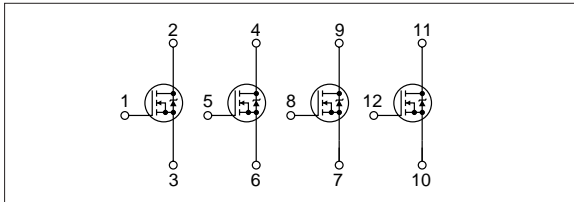
### Electrical characteristics

( $T_a=25^\circ\text{C}$ )

Symbol	Specification			Unit	Conditions
	min	typ	max		
$V_{(BR)DSS}$	100			V	$I_D=250\mu\text{A}$ , $V_{GS}=0\text{V}$
$I_{GSS}$			$\pm 500$	nA	$V_{GS}=\pm 20\text{V}$
$I_{DSS}$			250	$\mu\text{A}$	$V_{DS}=100\text{V}$ , $V_{GS}=0\text{V}$
$V_{TH}$	2.0		4.0	V	$V_{DS}=10\text{V}$ , $I_D=250\mu\text{A}$
$R_{e(yfs)}$	2.4	3.7		S	$V_{DS}=10\text{V}$ , $I_D=5\text{A}$
$R_{DS(ON)}$		0.27	0.30	$\Omega$	$V_{GS}=10\text{V}$ , $I_D=5\text{A}$
$C_{iss}$		350		pF	$V_{DS}=25\text{V}$ , $f=1.0\text{MHz}$ , $V_{GS}=0\text{V}$
$C_{oss}$		130		pF	$V_{GS}=0\text{V}$
$t_{on}$		60		ns	$I_D=5\text{A}$ , $V_{DD}=50\text{V}$ , $V_{GS}=10\text{V}$ , see Fig. 3 on page 16.
$t_{off}$		40		ns	
$V_{SD}$		1.1	1.8	V	$I_{SD}=5\text{A}$ , $V_{GS}=0\text{V}$
$t_{rr}$		330		ns	$I_{SD}=\pm 100\text{mA}$

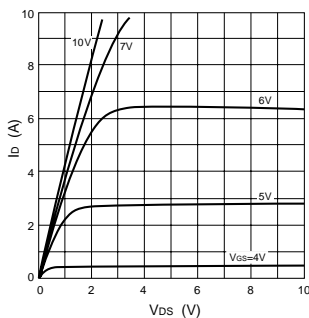
\* :  $V_{DD}=20\text{V}$ ,  $L=10\text{mH}$ ,  $I_D=2.5\text{A}$ , unclamped, see Fig. E on page 15.

### Equivalent circuit diagram

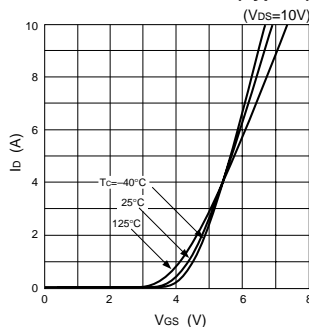


### Characteristic curves

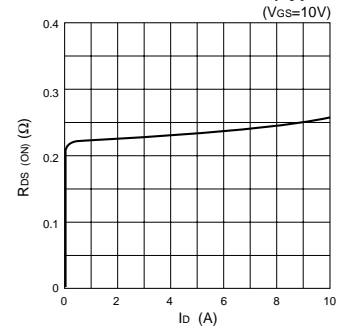
$I_D$ - $V_{DS}$  Characteristics (Typical)



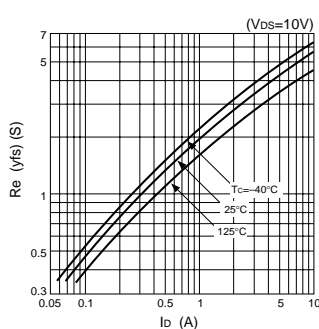
$I_D$ - $V_{GS}$  Characteristics (Typical)



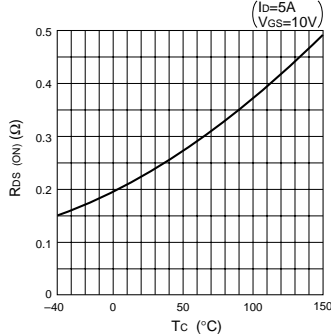
$R_{DS(ON)}$ - $I_D$  Characteristics (Typical)



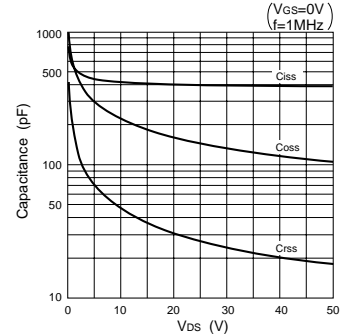
$R_{e(yfs)}$ - $I_D$  Characteristics (Typical)



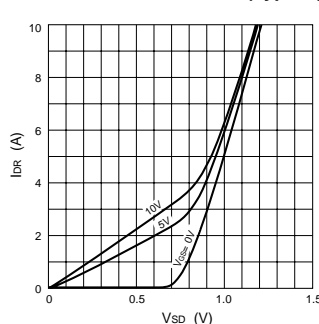
$R_{DS(ON)}$ - $T_c$  Characteristics (Typical)



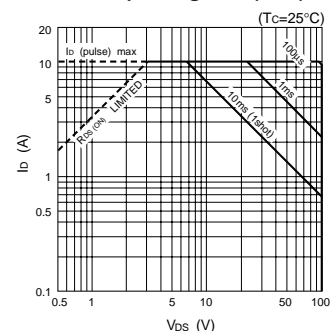
Capacitance- $V_{DS}$  Characteristics (Typical)



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



Safe Operating Area (SOA)



$P_T$ - $T_a$  Characteristics

