

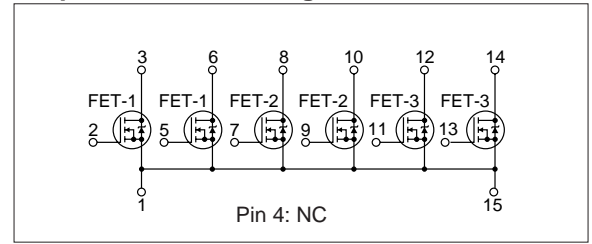
### Absolute maximum ratings

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

Symbol	Ratings			Unit
	FET1	FET2	FET3	
$V_{DSS}$	150			V
$V_{GSS}$	+20, -10			V
$I_D$	$\pm 7$	$\pm 5$	$\pm 7$	A
$I_D(\text{pulse})^*$	$\pm 15$	$\pm 10$	$\pm 15$	A
$P_T$	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)			$^\circ\text{C}/\text{W}$
$\theta_{j-c}$	3.57 (Junction-Case, $T_c=25^\circ\text{C}$ , with all circuits operating)			$^\circ\text{C}/\text{W}$
$V_{ISO}$	1000 (Between fin and lead pin, AC)			V <sub>rms</sub>
$T_{ch}$	150			$^\circ\text{C}$
$T_{stg}$	-40 to +150			$^\circ\text{C}$

\* $PW \leq 100\mu\text{s}$ , duty  $\leq 50\%$

### Equivalent circuit diagram



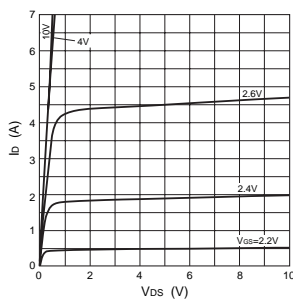
### Electrical characteristics

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

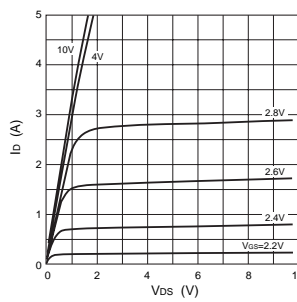
Symbol	FET1				FET2				FET3											
	Specification			Unit	Conditions			Unit	Conditions			Specification			Unit	Conditions				
	min	typ	max		min	typ	max		min	typ	max	min	typ	max		min	typ	max		
$V_{(BR)DSS}$	150			V	$I_D=100\mu\text{A}$ , $V_{GS}=0\text{V}$	150			V	$I_D=100\mu\text{A}$ , $V_{GS}=0\text{V}$	150			V	$I_D=100\mu\text{A}$ , $V_{GS}=0\text{V}$	150			V	$I_D=100\mu\text{A}$ , $V_{GS}=0\text{V}$
$I_{GSS}$			100	nA	$V_{GS}=20\text{V}$			100	nA	$V_{GS}=20\text{V}$			100	nA	$V_{GS}=20\text{V}$			100	nA	$V_{GS}=20\text{V}$
$I_{DSS}$			100	$\mu\text{A}$	$V_{DS}=150\text{V}$ , $V_{GS}=0\text{V}$			100	$\mu\text{A}$	$V_{DS}=150\text{V}$ , $V_{GS}=0\text{V}$			100	$\mu\text{A}$	$V_{DS}=150\text{V}$ , $V_{GS}=0\text{V}$			100	$\mu\text{A}$	$V_{DS}=150\text{V}$ , $V_{GS}=0\text{V}$
$V_{TH}$	1.0		2.0	V	$V_{DS}=10\text{V}$ , $I_D=250\mu\text{A}$	1.0		2.0	V	$V_{DS}=10\text{V}$ , $I_D=250\mu\text{A}$	1.0		2.0	V	$V_{DS}=10\text{V}$ , $I_D=250\mu\text{A}$	1.0		2.0	V	$V_{DS}=10\text{V}$ , $I_D=250\mu\text{A}$
$R_{e(yfs)}$	7	12		S	$V_{DS}=10\text{V}$ , $I_D=3.5\text{A}$	3	5.5		S	$V_{DS}=10\text{V}$ , $I_D=2.5\text{A}$	4	9		S	$V_{DS}=10\text{V}$ , $I_D=3.5\text{A}$	4	9		S	$V_{DS}=10\text{V}$ , $I_D=3.5\text{A}$
$R_{DS(ON)}$		80	105	m $\Omega$	$V_{GS}=10\text{V}$ , $I_D=3.5\text{A}$		330	440	m $\Omega$	$V_{GS}=10\text{V}$ , $I_D=2.5\text{A}$		150	200	m $\Omega$	$V_{GS}=10\text{V}$ , $I_D=3.5\text{A}$		150	200	m $\Omega$	$V_{GS}=10\text{V}$ , $I_D=3.5\text{A}$
		85	115	m $\Omega$	$V_{GS}=4\text{V}$ , $I_D=3.5\text{A}$		370	480	m $\Omega$	$V_{GS}=4\text{V}$ , $I_D=2.5\text{A}$		170	230	m $\Omega$	$V_{GS}=4\text{V}$ , $I_D=3.5\text{A}$		170	230	m $\Omega$	$V_{GS}=4\text{V}$ , $I_D=3.5\text{A}$
$C_{iss}$		1600		pF	$V_{DS}=10\text{V}$		380		pF	$V_{DS}=10\text{V}$		870		pF	$V_{DS}=10\text{V}$		870		pF	$V_{DS}=10\text{V}$
$C_{oss}$		380		pF	$f=1.0\text{MHz}$		95		pF	$f=1.0\text{MHz}$		320		pF	$f=1.0\text{MHz}$		320		pF	$f=1.0\text{MHz}$
$C_{rss}$		90		pF	$V_{GS}=0\text{V}$		25		pF	$V_{GS}=0\text{V}$		210		pF	$V_{GS}=0\text{V}$		210		pF	$V_{GS}=0\text{V}$
$t_{d(on)}$		35		ns	$I_D=3.5\text{A}$		25		ns	$I_D=2.5\text{A}$		25		ns	$I_D=3.5\text{A}$		25		ns	$I_D=3.5\text{A}$
$t_r$		70		ns	$V_{DD} \approx 70\text{V}$		50		ns	$V_{DD} \approx 70\text{V}$		55		ns	$V_{DD} \approx 70\text{V}$		55		ns	$V_{DD} \approx 70\text{V}$
$t_{d(off)}$		125		ns	$R_L=20\Omega$		55		ns	$R_L=28\Omega$		80		ns	$R_L=20\Omega$		80		ns	$R_L=20\Omega$
$t_f$		90		ns	$V_{GS}=5\text{V}$		40		ns	$V_{GS}=5\text{V}$		50		ns	$V_{GS}=5\text{V}$		50		ns	$V_{GS}=5\text{V}$
$V_{SD}$	1.0	1.5		V	$I_{SD}=7\text{A}$ , $V_{GS}=0\text{V}$	1.1	1.5		V	$I_{SD}=5\text{A}$ , $V_{GS}=0\text{V}$	1.0	1.5		V	$I_{SD}=7\text{A}$ , $V_{GS}=0\text{V}$	1.0	1.5		V	$I_{SD}=7\text{A}$ , $V_{GS}=0\text{V}$
$t_{rr}$		320		ns	$I_F=\pm 100\text{mA}$		180		ns	$I_F=\pm 100\text{mA}$		500		ns	$I_F=\pm 100\text{mA}$		500		ns	$I_F=\pm 100\text{mA}$

### Characteristic curves

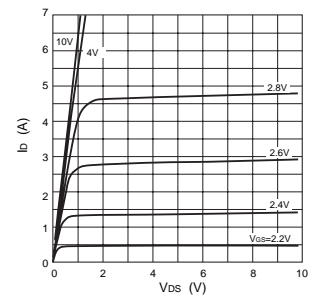
$I_D$ - $V_{DS}$  Characteristics (Typical)



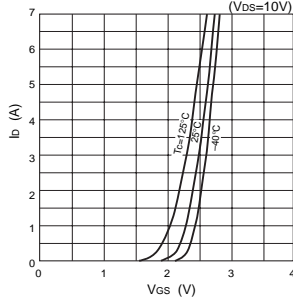
FET2



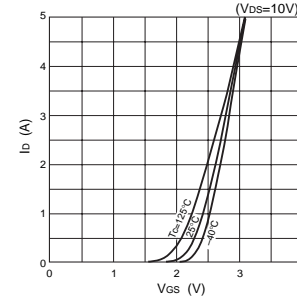
FET3



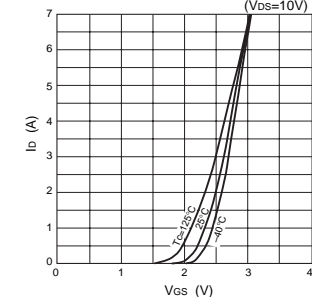
$I_D$ - $V_{GS}$  Characteristics (Typical)



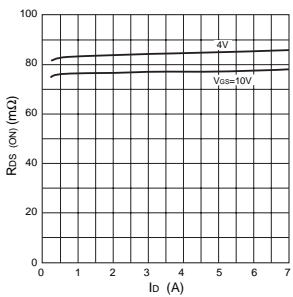
FET2



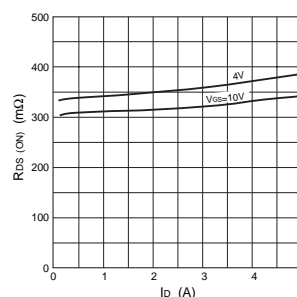
FET3



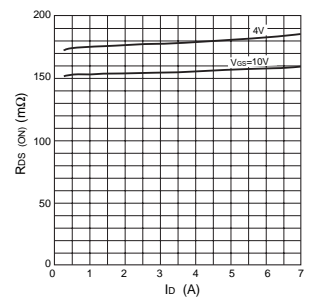
$R_{DS(ON)}$ - $I_D$  Characteristics (Typical)



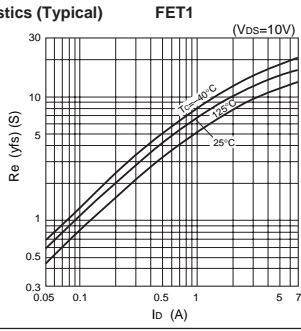
FET2



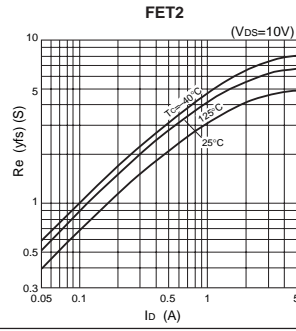
FET3



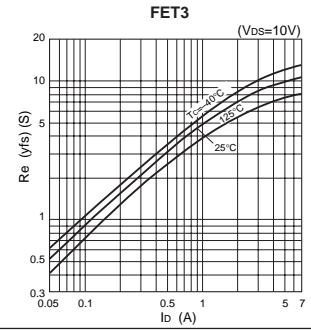
Re(yfs)-Id Characteristics (Typical)



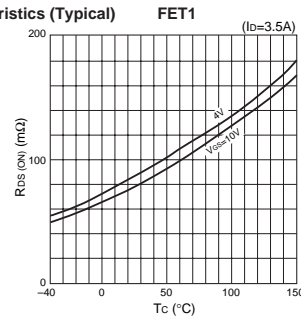
FET2



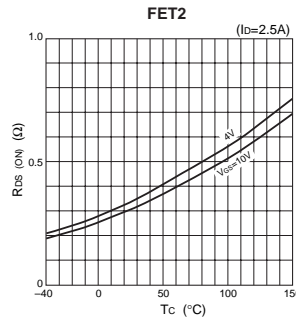
FET3



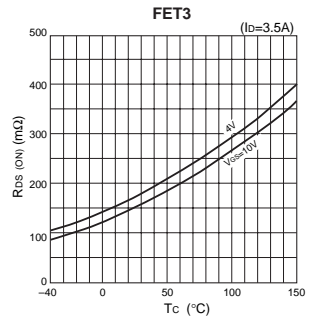
R<sub>DS(on)</sub>-T<sub>c</sub> Characteristics (Typical)



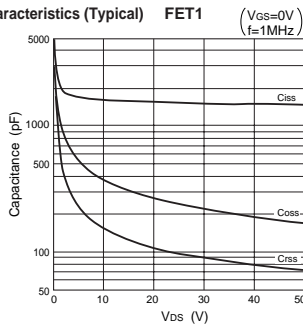
FET2



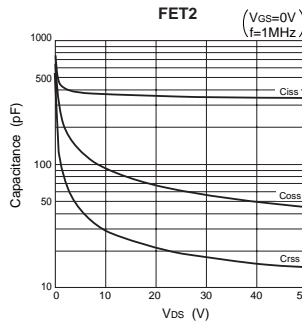
FET3



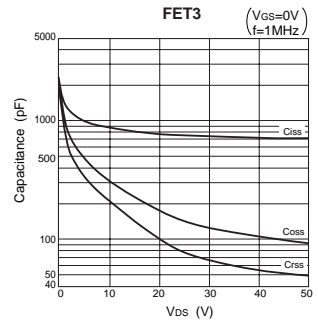
Capacitance-V<sub>DS</sub> Characteristics (Typical)



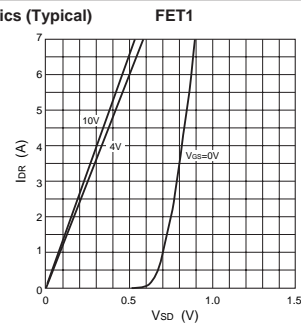
FET2



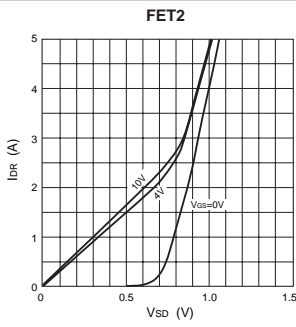
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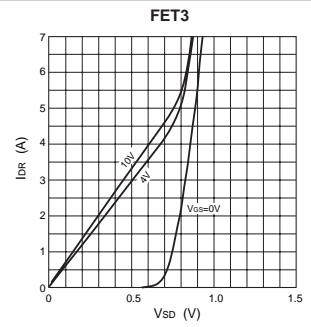
I<sub>DR</sub>-V<sub>SD</sub> Characteristics (Typical)



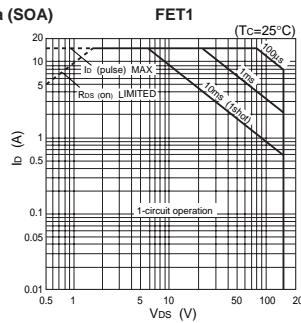
FET2



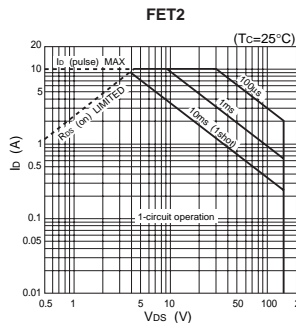
FET3



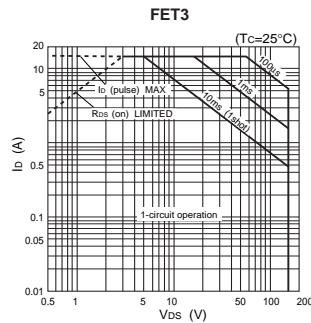
Safe Operating Area (SOA)



FET2



FET3



Pr-Ta Characteristics

